SUPPORTING DOCUMENT

FOR THE

BCTS-KALUM FOREST STEWARDSHIP PLAN

BC Timber Sales – Skeena Business Area

For operations within the Kalum Forest District, including areas in

- the Nass Timber Supply Area

- the Kalum Timber Supply Area

- Tree Farm Licence 1

- Tree Farm Licence 41

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SD1 INTRODUCTION

This document is provided in support to the Forest Stewardship Plan (FSP) for the Kalum Forest District portion of the Skeena Business Area of BC Timber Sales ("BCTS"). This supporting document is organized as follows:

Section SD1: Introduction, interpretation, and context of this FSP within the current planning framework that exists on the FSP area.

Section SD2: General descriptions and discussion of issues with respect to each of the eleven forest values that have been identified in the *Forest and Range Practices Act* (FRPA), followed by information that relates directly to the strategies and results noted in the FSP. The general discussion allows a more conversational description of the intent of the Forest Stewardship Plan, and adds clarity and context to the enforceable strategies and results noted in the FSP. It is BCTS' intent that this will simplify the FSP for the layperson.

Section SD3: Additional information for those parts of the FSP that are not related to the eleven forest values

Section SD4: A description of the sources of information used in preparing the FSP; and

Section SD5: Public, Agency, and First Nation referral, comment, review, and response information.

This "Supporting Document" is not considered part of the Forest Stewardship Plan.

Acknowledgements: Many people provided input, information, and comments that helped bring this FSP to completion (apologies in advance if I miss anyone): Gail Campbell, Wendy Cawley, Mike Folkema, Anne Hetherington, Trevor Jobb, Kevin Kilpatrick, Jim Knox, Tavis McDonald, Dave Nicholson, Norm Parry, Brad Pollard, Ellery Tetz, Lars Reese-Hansen, Mark Reiter, Trevor Swan. I would like to also recognise the stakeholders and First Nations representatives that provided input and comment on the plan. Thank you all for your contribution - the FSP is a better plan as a result. *Rick Brouwer, RPF*

SD1.1 Context of the FSP within the existing planning framework

The FSP is within the Kalum Forest District, and includes areas within the Kalum and Nass Timber Supply Areas. Several strategic planning initiatives have occurred within these areas:

SD1.1.1 Kalum Land and Resource Management Plan

The Kalum Land and Resource Management Plan (LRMP) covers the Kalum Timber Supply Area and Tree Farm Licences 1 and 41. The LRMP was approved by the provincial cabinet in 2002, but it was not designated as a "higher level plan" as defined in the *Forest Practices Code Act of BC* (FPC), nor in the FRPA. Therefore, the Kalum LRMP does not provide any legal objectives under FRPA, and as a result, no land-use objectives are listed in the FSP document.

However, since the LRMP did receive cabinet approval, a clear message has been sent that it provides guidance for forest management considerations. Therefore it is incumbent on both BC Timber Sales' professional staff and the delegated decision maker that the information in the LRMP be considered in the formulation and review of those parts of the FSP that overlap the LRMP area.

SD1.1.2 Thunderbird Integrated Resource Management Plan

The Thunderbird Integrated Resource Management Plan (TIRMP) was a pre-FPC plan. Nonetheless, the plan was prepared through a consensus based, multi-interest, public planning

body, so it was important to review and incorporate the management intent of the TIRMP into the Kalum LRMP. It was determined that the intent of the TIRMP would be addressed through implementation of

1) Forests practices legislation and regulations,
2) General resource management direction that applies to the whole Kalum Land and Resource Management Plan area, and
3) Designation of a Special Resource Management (SRM) Zones (subzones 1 and 2) within the Kalum LRMP for the Lakelse River corridor.

The Kalum LRMP also adopted two protected areas from the Thunderbird planning area: Hai Lake/Mt. Herman and Lakelse Lake Wetlands. These areas have now been designated as provincial parks.

SD1.1.3 Fiddler Creek Total Resource Plan

The Fiddler Creek Total Resource Plan (TRP) was completed in 1995 by the Ministry of Forests in consultation with Skeena Cellulose Inc., and the Gitxsan and Kitselas First Nations. The Fiddler TRP is intended to provide direction for operational planning and forest practices. It was approved by the District Manager in 1995, but has not been incorporated into the Kalum LRMP, nor has it been designated a higher level plan.

The purpose of the Fiddler TRP was to manage all resources, including timber, wildlife habitat, biodiversity, visual landscape, recreation and aboriginal interests.

The Fiddler TRP divided the area into four management zones with objectives as follows:

Zone 1 - Critical Habitat Zone: The objective for this area was to maintain wildlife rearing and feeding areas and manage riparian areas for water quality, fish habitat and biodiversity. Section 2 of the FSP describes the results and strategies for riparian areas and for wildlife and biodiversity objectives (*Forest Planning and Practices Regulation* (FPPR) sections 7(1), 8, 9, and 9.1), and these will capture the intent of the TRP objective.

Zone 2 - Fish and Wildlife Special Management Zone: The objective was to provide areas for feeding, rearing, travel and shelter ranging from the valley bottom to alpine areas and to conserve fish habitat areas. Section 2 of the FSP describes the results and strategies for riparian areas and for wildlife and biodiversity (FPPR s. 7(1), s. 8, s. 9, and s. 9.1) and these will capture the intent of this objective.

Zone 3 - Visually Sensitive Zone: The objective was to minimize the visual impact from Highway 16. The area was broken down into three subzones: subzone 3A has a retention VQO, subzone 3B has a partial retention VQO, and subzone 3C has a modification VQO. These VQOs have been established for the scenic area that covers the Fiddler TRP area, and Section 2 of the FSP describes the results and strategies for visual quality (FPPR s. 10), and these will capture this objective.

Zone 4 - Working Forest Zone: The objective was to maintain a wood supply for the forest industry while mitigating long term detrimental impacts on biodiversity and wildlife habitat. This is consistent with the objectives of FRPA.

During the preparation of the Fiddler Total Resource Plan, the Lax' Skiik of the Gitxsan provided the Ministry of Forests with an infrastructure map (January 1995) which included trails throughout the area. The importance of these trails to the Lax' Skiik is recognized by BCTS. The management strategy for conserving these trails may vary from a reserve corridor to retaining stand structure through partial cutting. The level of retention will generally depend on the level of current use and relative importance to the trail infrastructure. Other than the strategy/ result in the FSP that addresses this infrastructure map, the advent of the *Forest Practices Code* and its evolution into the *Forest and Range Practices Act*, means that the resource zoning and management guidance from the Fiddler TRP has been captured by the strategies and results in

this FSP.

SD1.1.4 Kwinageese Integrated Resource Management Plan

The Kwinageese Integrated Management Plan was completed in 1992. It has not been kept up to date, and has since been superseded by the *Forest Practices Code* and now the *Forest and Range Practices Act*.

SD1.1.5 Swan Lake Wilderness Management Plan/ Swan Lake Kispiox River Park Management Direction Statement

The Swan Lake Wilderness Area has been incorporated into the Swan Lake Kispiox River Provincial Park. The Swan Lake Wilderness Plan has been superseded by the Swan Lake Kispiox River Park Management Direction Statement (MDS). No strategies or results are necessary to be consistent with the MDS.

The Swan Lake Wilderness Plan identified that views from Swan Lake are to be managed to a retention VQO with the maximum visible alteration being five percent. The BC Ministry of Forests has since established scenic areas for Highway 37, and it assumed that these scenic areas have captured the appropriate parts of the Swan Lake viewscape.

SD1.2 Interpretation

All references to the Forest and Range Practices Act, or to FRPA, mean the *Forest and Range Practices Act (SBC 2002, s.69, consolidated to March 31, 2005)*.

All references to the Forest Planning and Practices Regulation, or to FPPR, mean the *Forest Planning and Practices Regulation (BC Reg 14/2004, consolidated to Feb 25, 2005)*.

All references to the Government Actions Regulation, or to GAR, mean the *Government Actions Regulation (BC Reg 582/2004, effective Dec 13, 2004)*.

All references to the Kalum Land and Resource Management Plan, or Kalum LRMP, mean the *Kalum Land and Resource Management Plan (May 2002)*.

As a result of a government re-organisation in July 2005, the Ministry of Water, Land, and Air Protection (MWLAP) was renamed as the Ministry of Environment (MOE). References to MWLAP in this document generally are kept when they refer to actions or items pre-July 2005, and MOE is used for post July 2005 items. However, they both mean the same ministry, and any errors in references are unintentional.

The July 2005 government re-organisation also caused the Ministry of Sustainable Resource Management (MSRM) to be renamed the Integrated Land Management Bureau (ILMB) and merged into the Ministry of Agriculture and Lands. Again, this document makes reference to both names, but they both refer to the same agency.

SD1.3 Acronyms

Acronyms used in the FSP or Supporting Document are as follows:

AIA:	Archaeological Impact Assessment
AOA:	Archaeological Overview Assessment
BA:	Basal Area
BCTS:	British Columbia Timber Sales
BEC:	Biological, Ecological, and Climatic; or Biogeoclimatic Ecosystem Classification
C&E:	Compliance and Enforcement
CDC:	Conservation Data Center

CWD:	Coarse Woody Debris
CWH:	Coastal Western Hemlock
DDM:	Delegated Decision Maker
DFO:	Department of Fisheries and Oceans
EMS:	Environmental Management System
FDP:	Forest Development Plan
FDU:	Forest Development Unit
FL:	Forest Licence
FLTC:	Forestry Licence To Cut
FPPR:	Forest Planning and Practices Regulation
FRPA:	Forest and Range Practices Act
FSP:	Forest Stewardship Plan
GAR:	Government Actions Regulation
GWM:	General Wildlife Measure
ICH:	Interior Cedar-Hemlock
ILMB:	Integrated Land Management Bureau
LRMP:	Land and Resource Management Plan
LU:	Landscape Unit
MAL:	Ministry of Agriculture and Lands
MoE:	Ministry (or Minister) of Environment
MoF:	Ministry (or Minister) of Forests (and Range)
MSRM:	Ministry (or Minister) of Sustainable Resource Management
MWLAP:	Ministry (or Minister) of Water, Land and Air Protection
NDT:	Natural Disturbance Type
NRFL:	Non-Renewable Forest Licence
OGMA:	Old Growth Management Area
RIC:	Resource Inventory Committee
RMA:	Riparian Management Area
RMZ:	Riparian Management Zone
RPBio:	Registered Professional Biologist
RPF:	Registered Professional Forester
RRZ:	Riparian Reserve Zone
SP:	Site Plan
SRMP:	Sustainable Resource Management Plan
TFL:	Tree Farm Licence
TRP:	Total Resource Plan
TSA:	Timber Supply Area
TSFA:	Terrain Stability Field Assessment
TSK:	BC Timber Sales – Skeena Office
TSL:	Timber Sale Licence
UWR:	Ungulate Winter Range
VIA:	Visual Impact Assessment
VQO:	Visual Quality Objective
VSC:	Visual Sensitivity Class
WAP:	Watershed Assessment Procedure
WHA:	Wildlife Habitat Area
WTP:	Wildlife Tree Patch

SD2 INFORMATION DIRECTLY RELATED TO THE STRATEGIES AND RESULTS

This section provides additional information on how the strategies or results identified in the FSP are consistent with objectives set by government, why the strategies or results have been selected, and how they relate to the forest values identified in the FRPA.

The section is organized by the forest values identified in the FRPA[1]: this is to allow a natural flow to the wording and background discussions.

Many strategies or results apply to more than one forest value. A table showing the strategies or results that are applicable to each forest value is provided in section SD2.12.

The following paragraphs are reproduced from the FSP document to remind the reader of the structure of Objectives, Strategies, and Results:

> *Objectives* are descriptions of how overall goals are to be achieved. In this case, the goals are increased flexibility in forest management, decreased administrative complexity, and maintenance of environmental protection. Objectives can vary from place to place, depending on the circumstances of the area. The FRPA defines three types of objectives:
>
> > *Objectives set in regulation*: These objectives are explicitly stated in the FPPR, and apply provincially.
> >
> > *Objectives enabled by regulation*: The Government Action Regulation provides authority to the Ministers of Forests; Water, Land, and Air Protection; or Sustainable Resource Management to establish objectives for certain items described in the regulation. These objectives can apply at many different scales.
> >
> > > Habitat objectives have been established for several wildlife species ("Section 7" notices). Some Wildlife Habitat Area objectives are also expected to be established in the near future. Section SD2.3 of the *Supporting Document* to the FSP provides further discussion of these items.
> >
> > *Land-use objectives*: These are objectives specific to a certain area that have been established through a Landscape Unit Plan or some sort of higher-level plan such as a Land and Resource Management Plan. The Minister of Sustainable Resource Management sets these objectives.
> >
> > > The Kalum Land and Resource Management Plan (LRMP) received Cabinet approval in April 2001, with the final document published in May 2002. However, it has not been designated as a higher-level plan, and therefore, the objectives within the LRMP are not considered land-use objectives under the FRPA. Section SD1.1 of the *Supporting Document* to this FSP provides further discussion of the Kalum LRMP.
>
> *Strategies* are:
> - measurable or verifiable steps or practices that will be carried out in order to achieve consistency with a particular established objective, and
> - the situations or circumstances that determine where in a forest development unit the steps or practices will be applied.
>
> *Results* are:
> - measurable or verifiable outcomes in respect of a particular established objective, and
> - the situations or circumstances that determine where in a forest development unit the outcomes will be applied.
>
> *Practice requirements* can be affected by strategies or results. Under the FPPR, default practice requirements are identified, that are considered to achieve some of the objectives set by government. However, the FPPR allows a FSP to provide strategies or results that can also achieve these objectives, and by doing so, the default practice requirements will no longer apply to activities under the FSP.

[1] Soils, Timber, Wildlife, Water, Fish, Biodiversity, Cultural heritage resources, Recreation resources, Resource features, Visual quality, and Forage

The remainder of this section provides background information on the forest values, and the details associated with the formulation of strategies or results.

SD2.1 Soils

SD2.1.1 General information

The soils on the FSP area are predominated by podzols[2] and are typical of the cool, moist climate, deep snow packs, and short growing season. The structure of the soils and its parent material is highly variable over the landscape, with clay- or silt-dominated soils being the most sensitive to erosion.

Maintenance of forest soil is facilitated by keeping the soil where it is – this is accomplished through consistency with the objectives set by government for soils, as described in section 2 of the FSP. Review of this section shows that currently, the only objectives are those set in regulation; there are no objectives enabled by regulation, nor are there any land use objectives.

BC Timber Sales has elected to follow the defaults outlined in section 35 and 36 of the FPPR to ensure consistency with the objective for soils. These defaults describe limits for allowable soil disturbance on a site, and limits on the area that can be given over to roads or landings.

In general, the intent of BCTS operations is to avoid areas having a high potential for landslides. When potentially unstable areas are unavoidable, operations will be prescribed and conducted in a manner that limits the risk of landslides and soil erosion. For instance, when operations are planned in areas with potential instability, risk of soil erosion or of potential impact on the environment can be limited by following the results and recommendations of detailed terrain stability field assessments.

SD2.1.2 Terrain Stability

Overview terrain stability and hazard mapping exists for the majority of our operating areas which have stability concerns. Where overview assessments have not been completed, BCTS has mapping that identifies areas where slopes exceed 60%

Terrain stability field assessments (TSFA) and/or site specific operational prescriptions may be prepared for those areas planned for development that have unstable or potentially unstable terrain, or that have high or very high soil erosion potential. Part of the terrain assessment report will include an evaluation of cut block/opening shape and size, or of proposed road locations, with a focus on their effect on soil erosion potential. TSFAs identify mitigation measures to minimize erosion and landslide potential within, adjacent to, and down slope of areas proposed for development. These protective measures may include relocating a section of road or block boundary, end hauling, full suspension cable harvesting, the season of harvesting, road deactivation, or other measures to maintain slope stability.

Sites requiring terrain stability field assessments are identified by BCTS personnel in the planning or layout stage and the TSFA will be undertaken concurrent with block and road layout.

Where a terrain stability field assessment is completed for an area, BCTS operations will be consistent with the assessment's results and recommendations.

As part of its Environmental Management System, BCTS also has an Emergency Response Manual to deal with an emergency like a landslide.

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[2] Coarse, well drained soil formed under cool, moist conditions that has its upper layers leached of organic matter and primary minerals

SD2.1.3 Information specific to the strategies and results

FSP Result Reference number: **TSK-KA-01**

Alwyn Creek flows into the Lakelse River system and has deep glaciomarine soils that have been proven to be highly unstable under certain conditions. A watershed assessment was completed for the Alwyn Creek watershed in 1995. This was a hydrologic assessment with an objective to define the current state of the watershed and provide guidance regarding further harvesting within the watershed. The study showed that the Alwyn Creek watershed produces high levels of suspended sediment due to the fine-textured soils within the basin. The source of sediment in Alwyn Creek is from the following:

1. Roads and trails adjacent to the creek
2. Ditch lines directing surface runoff water into the creek
3. Earth slumps, failures and cut banks along the length of the creek
4. Recreational vehicle crossings of the creeks
5. Channel erosion from peak flows.

The recommendation was for the Forest Service and the private landowners to take the lead role in protecting and mitigating water quality concerns in Alwyn Creek. This would be achieved by ensuring that existing roads and trails are deactivated prior to the construction of any new roads, reducing the current equivalent clear-cut area levels particularly above and around sensitive soil types, and by initiating a detailed road and channel assessment to determine the nature and extent of sediment sources and mobility within the watershed.

Consistency with the soils objective is achieved by addressing an area of known soil sensitivity that was singled out through public planning processes.

FSP Strategy and Result Reference number: **TSK-KA-02**

This strategy and result has been paraphrased from the Kalum LRMP. Consistency with the soils objective is achieved through taking action on roads, which are a known conduit for the movement of erodible soils: regular inspections will allow the risk of erosion to be mitigated.

Note that management for soils also occurs through strategies and results that are provided in other sections within this FSP:

TSK-KA-18 provides for controls on the timing of crossings of fish streams and to limit sediment input into those streams.

TSK-KA-21 places limits on the total clearcut area within a community watershed, thereby managing peak water flows and reducing the potential for erosion of soils in the watershed.

SD2.2 Timber

SD2.2.1 General information

The timber inventory in the area covered by this FSP varies from primarily Western Hemlock (*Tsuga heterophylla*) and Sub-alpine Fir (*Abies lasiocarpa*) in the north, to Western Hemlock and Balsam Fir (*Abies amabalis*) in the south. Sitka (hybrid) Spruce (*Picea sitchensis var.*), Mountain Hemlock (*Tsuga mertensia*), and Lodgepole pine (*Pinus contorta*) are also found throughout the FSP area in lesser amounts. Western Red Cedar (*Thuja plicata*) is found in the lower half of the FSP area, and Douglas Fir (*Pseudotsuga menziesii*) is only found in the offshore areas. Harvesting of this inventory will be conducted in a cost-effective manner that maintains the integrity of other associated resource values within the operating area. Harvesting techniques that maximize the economic, environmental and safe utilization of the timber resource will be encouraged.

The total allowable annual cut (AAC) administered by the Skeena Business Area is 1,048,769 m^3 (*personal communication. M Folkema, February 2005*) Within the Kalum Forest District, the AAC

is 675,180 m^3.The BCTS operating areas are spread throughout the district, from Kotsinta Creek in the north to Hawkesbury Island in the south. In addition, significant area has been added as a result of the AAC takeback from large tenure holders as mandated by Bill 28, the *Forestry Revitalization Act (SBC 2003, c.17)*.

Insects and Disease

BC Timber Sales is committed to managing the health of forest stands. The primary forest health management objective is to maintain, recover, or enhance the short and long term productivity of the timber resource by minimizing losses caused by insect, disease, windthrow, and other damaging agents to levels that are socially and economically acceptable. As early detection is one of the keys to preventing major outbreaks, stands are assessed on a regular basis through periodic surveys. If an epidemic outbreak of insects or disease is detected, BCTS, in consultation with other agencies, will determine the appropriate course of action. While strategic planning for forest health is guided by a Forest Health Strategy which is annually prepared for the Kalum Forest District, a short discussion of the most significant forest health factors follows.

Spruce Leader Weevil (*Pissodes strobi)* is one of the more common pests in plantations, particularly in the southern part of the district. The current strategy is to limit the amount of spruce being planted up to 20% in areas susceptible to weevil attack. This minimizes the risk of a plantation not successfully regenerating if the weevil damages the spruce. This limitation on spruce planting is reflected in the stocking standards included in the FSP (section 3.2).

Hemlock dwarf mistletoe (*Arceuthobium tsugense*) is present throughout the district. Two or three metre knockdown during harvesting is one method to slow down the rate of spread of dwarf mistletoe. In areas proposed for partial cutting or commercial thinning, trees infected with mistletoe may be targeted for removal. Since timber adjacent to cutblocks will have some level of infection it is difficult to eliminate mistletoe infection from managed stands. Highly productive sites have been shown to out grow branch-infested mistletoe, making management of mistletoe less important in these areas.

Voles (*Microtus spp.*) can cause considerable damage to young plantations. When planting in areas where voles are known to be a concern, collars can be placed around the seedlings for protection. This is a high maintenance solution and has only proven effective in some cases. Retaining perch trees or installing artificial perching structures can encourage vole predation by raptors. Overall, however, the primary strategy is to align planting activities with the boom and bust population cycle that voles typically follow. For example, fill planting may be prescribed for areas once vole populations are at the low end of their cycle.

Porcupine (*Erethizon dorsatum*) feeding on conifers is not a significant problem at the forest level but can be significant at the stand level. Some methods to minimize porcupine damage are to plant a variety of tree species on a block and favour tree species less susceptible to damage during juvenile spacing activities. Less susceptible species may include western red cedar and spruce.

Northern Pitch Moth (*Petrova albicapitana*), **Comandra Blister Rust** (*Cronartium comandrae*), and **Stalactiform Blister Rust** (*Cronartium coleosporiodes*) have been attacking some second growth pine stands in the Nass TSA. Since there are a number of pine leading second growth stands that are close to becoming free growing and reaching green-up, these pests are of concern. The Pitch Moth typically weakens the leader/main stem making the stem susceptible to wind and snow breakage. *Cronartium* rusts typically weaken and deform stems and have a higher probability of causing mortality. Because of the potential implications on second pass harvesting due to green-up constraints, stocking, wood quality, and growth and yield, the Ministry of Forests' current plan is to conduct an overview flight to determine the extent and risk of an infestation, conduct a literature review on potential treatments, and then develop a management strategy. BCTS will follow the Ministry's activities closely.

Dothistroma Needle Blight (*Mycosphaerella pini*) has recently been of concern: many young pine plantations have been attacked. There has been an aggressive effort to inventory the

attacked areas and set priority for treatment, which consists mostly of underplanting non-susceptible species. It is believed that Dothistroma is usually endemic in the forest, but a series of warm, wet summers, combined with the prevalence of young stands at a susceptible age, has allowed it to grow significantly. The Ministry of Forests has a program in place to address the hardest-hit stands, and for continued monitoring. The summer of 2004, while drier than previous years, has not halted the spread of this blight (*B. LaHaie, personal communication. April 22, 2005*). In addition to monitoring existing plantations, another strategy is to limit the amount of pine planted into new plantations.

Mountain Pine Beetle (*Dendroctonus ponderosae*) have been attacking and killing pine stands within the Rosswood, Nisga'a Lands, and Lower Nass areas. Currently there are no epidemic populations within the BCTS operating areas. If epidemic populations do develop within the BCTS operating areas then a strategy involving salvage logging and/or fall and burn may be necessary.

Tomentosus root rot (*Inonotus tomentosus*) and **Annosus** root disease (*Heterobasidion annosum*) are root diseases that naturally persist in forests throughout the Kalum District. Management strategies include harvesting the infested areas as part of normal cut block harvesting then reforesting the infection centers with less susceptible species. For Tomentosus root rot centers, Western Red Cedar, Sitka Spruce, and deciduous species are the preferred species to plant. For Annosus root disease centers, Lodgepole Pine and deciduous species are the preferred species to plant. Other viable treatments include stumping and knock over logging but these practices are expensive and would generally make harvesting the area uneconomical.

Windthrow

Windthrow is of general concern throughout the Kalum Forest District. Strong inflow and outflow winds as well as localized gusting winds can produce significant amounts of windthrown timber. Of particular concern is the stability of residual timber in partial cut stands, interior reserves in clear-cut areas, and riparian reserve areas. BCTS manages windthrow by minimizing the occurrence and salvaging accessible windthrow.

1. Minimizing the amount of windthrow is achieved by taking into consideration the direction of prevailing winds and windthrow risk when prescribing silviculture systems and designing cut block boundaries. Feathering of susceptible block boundaries and wildlife tree patches has recently been prescribed and the effectiveness of this will be monitored once implemented. Also being considered is thinning tree crowns on block boundaries to reduce the amount of edge windthrow, particularly where windthrow may impact other forest resources such as fish habitat. Site specific measures will be determined during block layout and prescribed in silviculture prescriptions.

   The following are examples of tree characteristics that are considered when selecting wind firm trees and when designing a feathered edge:
   - small, open crowns
   - good root anchorage in deep, well-drained soils
   - no root or bole rot
   - low height-to-diameter ratio for stand (relatively large taper)
   - short trees
   - trees that have been growing in relatively open conditions
   - broad-leafed deciduous species
   - sound snags
   - sound, well-rooted veteran trees (e.g. dead top cedar)

2. Salvaging wind thrown timber where it occurs will be undertaken where economical. Areas of wind thrown timber larger than one (1) hectare in size are usually laid out and sold competitively. Where large blowdown events occur, adjacent susceptible timber is reviewed for its windthrow potential and high hazard areas may be proposed for harvests concurrent with the salvage of the wind thrown timber.

Removal of windthrow trees within riparian management areas (RMAs) will be considered where the integrity of stream banks will be protected. Where there are standing undamaged trees within RMAs, retention of these standing trees will provide a natural wind firm feathered boundary and also provide valuable riparian habitat. Windthrow trees that have entered a stream channel will only be removed if they are determined to be negatively impacting the stream habitat and/or channel stability, or they can be removed without negatively impacting stream channel stability and water quality.

Fire Protection

Forests in the BCTS operating areas generally consist of decadent hemlock/ balsam stands with some areas containing minor components of spruce, cedar or pine. Logging slash, one of the most hazardous fuel types, can create a high fire hazard unless managed appropriately.

To minimize fire hazard, the following fuel management strategies may be used:

1. Salvage wind thrown timber wherever economical and environmentally practicable.
2. Pile roadside slash and landing accumulations concurrently with harvesting operations. Where possible, slash piles will be burned in the fall when there is a reduced fire hazard.

BCTS will also submit a contact list annually to the Ministry of Forests' Northwest Fire Centre.

Prescribed burning is an option primarily used for different purposes such as reducing the duff layer, creating plantable spots or reducing fuel loads, or creating conditions for growth of early seral stage species (e.g. berries for First Nations cultural use). At this time, BCTS does not plan to use prescribed burning on any areas. If fuel loading becomes a concern or site preparation for reforestation is required, then broadcast burning may be an option.

In areas where smoke is a concern, such as around the Terrace Airport, BCTS will coordinate any hazard abatement with the appropriate organizations and/or individuals. The size and number of debris piles being burned at one time may be reduced in areas where smoke management is a concern.

SD2.2.2 Information specific to the strategies and results

FSP Result Reference number: **TSK-KA-03**

The Stocking Standards in this FSP are based on established standards that have undergone extensive review, including the consideration of economically and ecologically viable species, and the forest health risks associated with those species. As an example, the percentage of spruce that can be accepted is limited in certain biogeoclimatic areas.

A departure from the previously established stocking standards is the late free growing date, which has been set at 20 years. This is in accordance with the FPPR section 44, which makes allowance for this time frame. Under the current silviculture treatment regime, there has often been a need to extend the late free-growing date for reforested areas. By extending the late free-growing date, there will be a reduction in unnecessary paperwork and an increase in operational flexibility for the licence. With the current level of information respecting the state of silviculture in the area, it is not expected that current forest management practices will change. Since timber supply reviews are based on current management practices. The change in the free growing date is not expected to impact the timber supply.

The stocking standards in Appendix A of the FSP also address wildlife objectives by allowing reduced stocking and inter-tree spacing. The previously established stocking standards addressed grizzly bear forage requirements, and this FSP expands those standards to include forage for moose winter range as well. See the discussion of result **TSK-KA-07** for more information.

Consistency with the timber objective is achieved by confirming the need to reforest areas that are harvested, so there will be timber for the forest industry in the future.

FSP Strategy Reference number: **TSK-KA-04**

This strategy is consistent with the Upper Kitsumkalum Special Resource Management Zone from the Kalum LRMP. The strategy simply clarifies that road construction may be required in or through the SRM zone, and ensures that a clear rationale is prepared detailing the need for any road construction within the SRM zone.

Consistency with the timber objective is achieved by maintaining access to future potential operating areas is maintained.

FSP Result Reference number: **TSK-KA-05**

This result has been paraphrased from the Kalum LRMP. Successful development of a resource management plan for the Kowesas will demonstrat a methodology for ensuring all forest values can be addressed successfully on a small watershed.

Consistency with the timber objective is achieved by acknowledging a short term deferral of operations while a plan is prepared within an area that might otherwise see restrictions for commercial forestry.

SD2.3 Wildlife

SD2.3.1 General information

On May 6, 2004, under section 11 (now section 13) of the *Government Actions Regulation* (GAR), the Minister of WLAP identified species of wildlife that require management. The Minister designated the following species as species at risk under FPPR s. 7(2)(a):

Reptiles
- "Great Basin" Gopher Snake

Amphibians
- Great Basin Spadefoot
- Tiger Salamander
- Red-legged Frog
- Rocky Mountain Tailed Frog
- Northern Leopard Frog
- Coastal Giant Salamander
- Coastal Tailed Frog
- Coeur d'Alene Salamander

Mammals
- Keen's Long-eared Myotis
- Pacific Water Shrew
- Fringed Myotis
- Badger
- Vancouver Island Marmot
- Caribou (Mountain, Boreal, Northern populations)
- Spotted Bat
- Grizzly Bear
- Wolverine (subspecies *luscus, vancouverensis*)

Birds
- Ancient Murrelet
- Burrowing Owl
- Flammulated Owl
- Great Blue Heron
- Lewis's Woodpecker
- Marbled Murrelet
- "Queen Charlotte" Goshawk
- Sage Thrasher
- Short-eared Owl
- Spotted Owl
- "Interior" Western Screech Owl
- White-headed Woodpecker
- Yellow-breasted Chat

Fish
- Vananda Lake Limnetic Stickleback
- Vananda Lake Limnetic Stickleback

Plants
- Scouler's Corydalis
- Tall Bugbane

This list was provided through FRPA. There are also "red- or blue-listed" species identified through the Conservation Data Center (CDC), and these are also often referred to as "species at risk". From the perspective of FRPA, however, these CDC species are not addressed in the FSP unless they are also identified under the GAR.

BCTS has noted in its Environmental Management System (EMS) that the CDC red and blue listed species will be part of its management regime. Therefore, even though these species are not included in the FSP, they are discussed in this supporting document.

As of October 2005, the CDC lists two animal and one plant species as red-listed (extirpated, endangered, or threatened), and twelve animal and sixteen plant species as blue-listed (of special concern). The species identified through GAR are included in this CDC list, and are dealt with in the FSP. The remaining red- and blue-listed species are addressed through operational controls under the BCTS EMS.

SD2.3.2 Species at Risk identified through GAR

Of the species listed in the May 6, 2004 notice under GAR, Coastal Tailed Frog, Great Blue Heron, Grizzly Bear, Marbled Murrelet, and Wolverine are identified as occurring within the Kalum Forest District:

As of October 2005, notices providing descriptions of the habitat area, distribution, and attributes for the identified species at risk in the Kalum Forest District have been issued by the MWLAP (now MoE) for

- Coastal Tailed Frog
- Grizzly Bear
- Marbled Murrelet

Notices for Great Blue Heron or Wolverine have not been issued, so strategies or results for these wildlife species are not required in the FSP. However, between the strategies and results that address the coastal tailed frog, grizzly bear, and marbled murrelet, as well as those for ungulate winter range, plus the other strategies within this FSP that address water and biodiversity issues, management is occurring that benefits **all** the identified species.

SD2.3.2.1 Coastal Tailed Frog

The coastal tailed frog is dependent on small forest streams, usually stream class 3, 4, 5, or 6. Following the default riparian management area widths, as referenced in section 2.4.5 of the FSP, will capture a significant portion of this habitat. In addition, the Kalum LRMP identified the Ascaphus Special Management Zone as a no harvest area, specifically to maintain a known population of tailed frogs: this area is identified under result **TSK-KA-06**. The Ascaphus SMZ from the Kalum LRMP is also one of ten (10) wildlife habitat areas (WHA) at the proposal stage for the coastal tailed frog. The goals for these WHAs will be stream stability, maintenance of water temperature, riparian habitat and microclimate, and coarse woody debris for adult frog dispersion (*personal communication, A Hetherington, Jan 14, 2005*). General Wildlife Measures as described in the Identified Wildlife Management Strategy will apply once the WHAs are approved.

Over the remainder of the FDU area, the practice requirements for riparian areas (as described in FPPR s. 47 – 51), plus the retention of trees as described in result **TSK-KA-20**, will provide for the needs of the coastal tailed frog as described in the notice of habitat amount, distribution and attributes for this species.

SD2.3.2.2 Great Blue Heron

The great blue heron is dependent on lakes and ponds and is generally a lowland species. Following the default riparian management area widths, as referenced in section 2.4.5 of the FSP, especially with respect to protection around lakes, will capture a significant portion of this habitat.

Breeding habitat is often lowland sites with deciduous forest, preferably red alder *(Accounts and Measures for Identified Wildlife – Great Blue Heron, 2004)*. These sites often overlap with Moose Winter Range areas, so it is expected that the strategies for moose will also benefit the Great Blue Heron.

SD2.3.2.3 Grizzly Bear

The Kalum LRMP includes objectives and strategies for managing grizzly bear habitat within identified Grizzly Bear Watershed Units. The following table identifies which BCTS FDUs overlap with Grizzly Bear Watershed Units.

Grizzly Bear Watershed Units within Forest Development Units

FDU	*(Sub-unit)*	*Grizzly Bear Watershed Units*
Douglas-Gardner		1 Tsaytis 2 South Seekwyakin 3 Owyacumish-Brim 4 Wahoo 5 Kemano-Horetzky 7 Weewanie 8 Falls 9 Kildala 10 Dahlaks 11 Dala
Kowesas		6 Kowesas
Kitimat Valley		12 Hirsch 13 McKay-Davies 14 Lakelse-Cecil 21 Little Wedeene 22 Wedeene
Terrace	(Dasque)	15 Skeena River West
	(Thunderbird-Williams)	14 Lakelse-Cecil 15 Skeena River West 23 Williams
	(Limonite-Kitnayakwa)	25 Copper 26 Kleanza
	(Deep-Eneek)	27 Little Oliver – Skeena River East 35 Star-Alice-Deep
	(Fiddler)	27 Little Oliver – Skeena River East 28 Fiddler
	(Kitsumkalum)	29 Maroon-Wesach 30 Shames-Zymacord 31 Erlandsen 35 Star-Alice-Deep 36 Nelson 37 Mayo 38 Beaver
	(Big Cedar)	39 Cedar
	(Kiteen)	45 Kiteen

Within this FSP, management of grizzly bear habitat will be focused on the grizzly bear identified watersheds, and will occur by maintaining forage within critical habitats. This means cluster planting and/or reduced stocking in several rich and wet ecosystems: the Stocking Levels for Managing Grizzly Bear Habitat as identified in the LRMP were used in the stocking standards in the FSP (see FSP Appendix A Table A2). When ecosystem classification identifies a complex (mappable or not) that contains at least 20% of an identified richer or wet ecosystem, the area will be included in a standards unit that manages for grizzly bear habitat. Result **TSK-KA-07** uses the following recommended stocking levels from the LRMP to facilitate grizzly bear forage in rich to wet ecosystems:

Coastal Western Hemlock (CWH) biogeoclimatic zone		**Free growing stocking standards**[2] (well spaced stems/ha)		
Subzone, variant	**Site association**[1]	**Target**	**Min.**	**Max.**[3]
vm1 and vm2	BaSs - Devil's club-(08)	600	400	660
ws1 and ws2	BaCw - Devil's club-(06)	600	400	660
vm1 and vm2 ws1 and ws2	CwSs - Skunk cabbage-(14 and 11) CwSs - Skunk cabbage-(11)	400	200	440
vm1 and vm2 ws1 and ws2	Ss – Salmonberry-(09 and n/a)) Ac - Red-osier dogwood-(10 and n/a) Ss – Salmonberry-(07) Ac - Red-osier dogwood-(08)	500	200	550

1. *Stocking levels for low bench floodplain site associations are not listed; site-specific prescriptions should be developed that account for the naturally low density of microsites appropriate for crop tree growth and high shrub cover.*
2. *The "well spaced" clause does not apply to forage gaps when stems are clustered as part of the silvicultural prescription. Crop tree sizes vs. competing brush standards are unchanged from existing regional guidelines. When determining the number of crop trees, minimum inter-tree distances, as stated in the silviculture prescription, still apply to trees within the cluster.*
3. *If stand exceeds maximum density set in the prescription at free growing, these guidelines recommend spacing back to this stocking level.*

Other possible measures that would favour maintenance of grizzly bear forage or critical habitat types include:

- returning areas to a young seral state by harvesting at age class 4;
- opening the forest floor to more light and extending the window for forage production, thorough pre-commercial and commercial thinning, selection or variable retention harvesting, or pruning,
- acceptance of small NSR patches if they contribute to maintenance of forage,
- using prescribed fire to open the forest floor to more light and to create a nitrogen flush for forage production.

Grizzly bear forage and habitat will also be maintained through result **TSK-KA-08** and strategy and result **TSK-KA-15**, which ensure a distribution of patch sizes and seral stages on the landscape. Setting aside specific areas as no-harvest zones for grizzly bear is not seen as necessary at this time by BC Timber Sales: the wildlife corridors identified for the Kleanza-Zymoetz pass (result **TSK-KA-09**), the Williams-Clore pass (result **TSK-KA-10**), and the restrictions on the Kiteen-Cedar pass as described in result **TSK-KA-11** provide protection for grizzly bear movement (as well as for other species); Wildlife Habitat Areas for grizzly bear are being prepared and will likely be proposed sometime in 2006 *(A. Hetherington, personal communication, January 14, September 26, 2005)*; and there should be sufficient amounts of old growth retention as provided for through strategies **TSK-KA-15** and **TSK-KA-23**.

SD2.3.2.4 Marbled Murrelet

The marbled murrelet is dependent on large trees within old forests for its nest sites. In addition to the old forest that exists outside of the timber harvesting landbase, the strategy **TSK-KA-15**, which maintains the old growth proportion by landscape unit, will ensure that this old forest structure is maintained. In addition, this strategy will ensure a distribution of patch sizes is found on the landscape: this should reduce the amount of forest fragmentation, which is likely better for the murrelet *(Accounts and Measures for Identified Wildlife – Marbled Murrelet, 2004)*.

The farthest distance that the marbled murrelet might be encountered from tide water is 80 km. The establishment of the Foch-Gilttoyees park and its connectivity to the Gitnadoix Park result in a significant amount of old growth set aside from sea level to alpine that is well within the range of

the marbled murrelet. Other areas that have been set aside, such as Eagle Bay Provincial Park, Lakelse Wetlands Provincial Park, and Sleeping Beauty Mountain Provincial Park, also contribute. In addition, strategy **TSK-KA-23,** which addresses the requirements of the Old Growth Order, should ensure that there are areas reserved with potential nesting sites.

SD2.3.2.5 Wolverine

The wolverine is not dependent on any particular habitat type. However, this carnivore is primarily a carrion feeder that often depends on ungulates as a food source *(Accounts and Measures for Identified Wildlife – Wolverine, 2004)*. As a result, the wolverine's range will often overlap with moose or mountain goat winter range, so it is expected that the strategies for moose and goat winter range will also benefit the wolverine.

SD2.3.3 Regionally important species

Under section 13(2) of the GAR, the Ministry of Environment can identify regionally important species.

As of October 2005, there have been no regionally important species identified for the Kalum Forest District.

SD2.3.4 Specified ungulate species and associated Ungulate Winter Range

Under section 13(3) of the GAR, the Ministry of WLAP (now MOE) has identified the following as ungulate species for which an ungulate winter range may be required.

- Mule and black-tailed deer
- White-tailed deer
- Elk
- Mountain Goat
- Caribou
- Bighorn Sheep
- Thinhorn sheep
- Moose

Only mountain goat and moose are identified as requiring ungulate winter range management in the Kalum TSA, TFL 1, and TFL 41. Only mountain goat is identified for the Nass TSA.

Notices providing descriptions of the habitat area, distribution, and attributes for ungulate species were made available by the Ministry of WLAP in December 2004 for:

- Mountain Goat - Nass TSA, Kalum TSA, TFL 1, and TFL 41.
- Moose - Kalum TSA, TFL 1, and TFL 41.

Ungulate winter range (UWR) mapping exists for the area covered by the Kalum LRMP (all areas covered by this FSP except the Nass TSA).

SD2.3.4.1 Mountain Goat Ungulate Winter Range

The description of the area, distribution, and attributes of mountain goat UWR in the Kalum TSA, TFL 1, and TFL 41 correlates with UWR mapping for the area, and this mapping is shown on the FSP maps.

The objectives of the Kalum LRMP for goat UWR are as follows:

1. Maintain winter forage areas adjacent to escape terrain that provides critical winter habitat.
2. Minimize human disturbances to goats on their critical winter habitats.

These objectives are met through the strategies and results in **TSK-KA-12**, **TSK-KA-16**, and **TSK-KA-17**: they place limits on the type and timing of activities, and the mapped UWR that is referred to by the strategy already includes an amount of forage area. In addition, forage areas near the UWR mapped polygons that are outside of the polygons are often non-forested and would not be of interest to BC Timber Sales.

The description of the area, distribution, and attributes of mountain goat UWR in the Nass TSA does not have associated mapping. However, result **TSK-KA-13** accounts for this and requires that possible goat UWR be reviewed before actions can occur.

SD2.3.4.2 Moose Ungulate Winter Range

The description of the area, distribution, and attributes of moose UWR in the Kalum TSA, TFL 1, and TFL 41 correlates with UWR mapping for the area, and this mapping is shown on the FSP maps.

The objectives of the Kalum LRMP for moose UWR are as follows:

1. Manage the Skeena, Nass, and Beaver Moose Winter Ranges to sustain the over-wintering moose populations
2. Maintain and where desirable, enhance the quality, quantity, and distribution of moose winter forage in the Skeena, Nass, and Beaver Moose Winter Ranges.
3. Provide a steady long-term supply and distribution of thermal cover in primary moose winter range.
4. Provide security habitat for wintering moose populations for identified primary and secondary moose winter range. Secondary winter range strategies will be based on operational feasibility.
5. Encourage forage production and maintain/ enhance forested thermal cover on secondary moose winter range.

Moose UWR in the Kalum TSA, TFL 1, and TFL 41 is mapped and is consistent with the UWR notice prepared by the MWLAP (now MOE). This area already includes an amount of forage area. In addition, forage areas near the UWR mapped polygons that are outside of the polygons are often non-forested and would not be of interest to BC Timber Sales.

Strategy and result **TSK-KA-14** addresses security and maintenance of moose winter populations by requiring that winter range be avoided wherever possible by limiting activities to occur during the months of May to November. If activities are necessary beyond those dates, an evaluation by a professional wildlife biologist is required. Mitigating actions as guided by the LRMP objectives may also be necessary. This strategy further recognizes that Primary Winter Range as described in the Kalum LRMP is identified as being very important moose UWR area. The strategy places additional limits on the location and timing of activities for this area.

The wildlife corridors identified for the Kleanza-Zymoetz pass (result **TSK-KA-09**) and Williams-Clore pass (result **TSK-KA-10**) and the restrictions on the Kiteen-Cedar pass as described in result **TSK-KA-11** will provide protection for moose movement (as well as for other species).

Maintenance of forage and browse species within moose UWR can also be achieved through the application of reduced stocking and/or cluster planting on the moist rich sites that occur within the UWR areas. The result **TSK-KA-07** describes stocking that is applicable to moose as well as grizzly bear (see section SD2.3.2.3 above).

Moose has not been identified as an ungulate species that requires management in the Nass TSA, and there is no moose UWR identified for the Nass. Therefore, there is no strategy or result for moose UWR in the Nass portion of this FSP.

SD2.3.5 Wildlife Habitat Areas

In accordance with section 10 of the Government Actions Regulation, the MOE can specify wildlife habitat areas and objectives for wildlife habitat areas. However, as of October 2005, there are no wildlife habitat areas set for the area covered by the FSP.

There are ten (10) WHAs that are going to be proposed shortly for the coastal tailed frog. General wildlife measures as described in the Identified Wildlife Management Strategy will apply once the WHAs are approved *(A. Hetherington, personal communication, January 14, September 26, 2005)*.

Possible Wildlife Habitat Areas for grizzly bear are being evaluated, and should be proposed sometime in 2006 *(A. Hetherington, personal communication, January 14, September 26, 2005)*.

SD2.3.6 Wildlife Habitat Features

In accordance with GAR section 11, the MOE can specify wildlife habitat features. However, as of October 2005, there are no wildlife habitat features set for the area covered by the FSP.

SD2.3.7 General wildlife measures

In accordance with GAR section 9, the MOE can specify general wildlife measures.

In June 2004, an updated version of the Identified Wildlife Management Strategy (IWMS) was released, providing an accounting of, and including general wildlife measures for, the management of species at risk identified in the May 6, 2004 notice.

These accounts and measures are excellent background information, and have influenced the strategies and results for wildlife in this FSP. Once spatially-defined wildlife habitat areas are established for identified species at risk, these general wildlife measures will apply on those areas.

SD2.3.8 Information specific to the strategies and results

FSP Result Reference number: **TSK-KA-06**

This strategy and result has been paraphrased from the *Kalum Land and Resource Management Plan (2002)*. It follows the guidance of the Kalum LRMP (Ascaphus Zone) respecting retention of tailed frog habitat in the Ascaphus Creek area, by designating the area identified in the Kalum LRMP as Special Resource Management – Ascaphus as a no-harvesting area. The area is shown on the FSP map.

Consistency with the wildlife objective and associated notice is achieved through retaining an area publicly identified as known Coastal Tailed Frog habitat while WHAs are being drafted.

FSP Result Reference number: **TSK-KA-07**

This strategy and result is based on an amalgamation of the *Grizzly Bear* section 2.1 from the Kalum LRMP and the Habitat Attributes for Moose as described in the *Notice – Indicators of the Amount, Distribution, and Attributes of Wildlife Habitat Required for the Winter Survival of Ungulate Species* for TFL 1, TFL 41, and the Kalum TSA. Reduced stocking requirements and minimum inter-tree spacing was determined through the LRMP to reflect the needs of grizzly bear, and this was incorporated into the accepted stocking standards for the Kalum Forest District. Review of the requirements for Moose winter habitat gives rise to an additional variation from the March 2003 stocking standards, in the application of reduced stocking and lower inter-tree spacing to Moose Winter Range. The same reasons apply as for the Grizzly Bear: increased forage potential while still maintaining a commercially viable forest stand. While both species have different habitat connectivity requirements, the forage needs of moose are similar to that of grizzly bear (*personal communication, B. Pollard, RPBio – January 14 2004*), allowing the same stocking standards to apply to both species.

Consistency with the wildlife objective is achieved through this result's establishment of criteria for maintaining forage opportunities for identified species.

FSP Result Reference number: **TSK-KA-08**

This strategy and result flows from strategies in the Kalum LRMP, (*Ungulate Winter Range* and *Grizzly Bear*) which utilized expert information regarding wildlife, and on the general management direction provided with the Ungulate Winter Range notice for the Kalum TSA, TFL 1 and TFL 41.

Consistency with the wildlife objective is achieved through this result's balancing of seral stages to ensure continued forage opportunities for identified species.

FSP Result Reference number: **TSK-KA-09**

This strategy and result has been paraphrased from the Kalum LRMP (*Biodiversity* section 3.5), and is consistent with the wildlife objective and associated notice by providing for a travel corridor between habitat areas.

FSP Result Reference number: **TSK-KA-10**

This strategy and result has been paraphrased from the Kalum LRMP (*Biodiversity* section 5.4), and is consistent with the wildlife objective and associated notice by providing for a travel corridor between habitat areas.

FSP Result Reference number: **TSK-KA-11**

This strategy and result has been paraphrased from the Kalum LRMP (*Biodiversity* section 5.3) and is consistent with the wildlife objective and associated notice by providing for a travel corridor between habitat areas.

FSP Strategy and Result Reference number: **TSK-KA-12**

This strategy and result have been paraphrased from the Draft General Wildlife Measure (GWM) for Mountain Goat Ungulate Winter Range in the Kalum TSA and TFLs 1 and 41 (*Draft 2 – April 2005*), and clarifies what is required for an exemption under the GWM for timing of activities around the UWR. This wording has been discussed with representatives of the Ministry of WLAP[3].

Consistency with the wildlife objective and associated notice is achieved through this strategy and result's limiting of disturbance to ungulate species when in their winter range.

FSP Result Reference number: **TSK-KA-13**

In the Nass TSA, there have not been any indicators of habitat amount, distribution or attributes provided by the MOE. As a result, there is no strategy or result required in the Nass. However, where ungulate winter range is identified in the Nass FDU, BCTS will follow the intent of this result.

Consistency with the wildlife objective and associated notice is achieved through this result's providing for a way to limit disturbance to ungulate species when in their winter range.

FSP Strategy and Result Reference number: **TSK-KA-14**

This strategy and result flows from strategies in the Kalum LRMP, which utilized expert information regarding wildlife, and on the general management direction provided with the Ungulate Winter Range notice for the Kalum TSA, TFL 1 and TFL 41.

Consistency with the wildlife objective and associated notice is achieved through this strategy and result providing for a way to limit disturbance to ungulate species when in their winter range.

FSP Strategy and Result Reference number: **TSK-KA-15**

This strategy and result will allow a distribution of areas of different sizes over an extended period of time. It is based on the well-established science of Natural Disturbance Types and the temporal and spatial distribution of disturbance, as described in the *Biodiversity Guidebook* (September 1995), and uses the analysis as described in the guidebook.

This strategy and result are consistent with the habitat requirements for grizzly bear and marbled murrelet, as described in the notices for these species under section 7 of the FPPR. Moose will also benefit from a range of seral stages, particularly with respect to continued forage opportunities.

[3] L. Reese-Hansen, MWLAP – Terrace (May 9, 2005); D. Fillier, MWLAP – Smithers (May 11, 2005)

FSP Strategy Reference number: **TSK-KA-16**

This strategy has been paraphrased from the Draft General Wildlife Measure (GWM) for Mountain Goat UWR in the Kalum TSA and TFLs 1 and 41 (*Draft 2 – April 2005*), and clarifies what is required for an exemption under the GWM for activities in and around the UWR. This wording has been discussed with representatives of the Ministry of WLAP[4] to ensure that consistency with the wildlife objective and associated notice is achieved.

FSP Strategy and Result Reference number: **TSK-KA-17**

This strategy and result has been paraphrased from the Draft General Wildlife Measure (GWM) for Mountain Goat UWR in the Kalum TSA and TFLs 1 and 41 (*Draft 2 – April 2005*), and clarifies what is required for an exemption under the GWM for road access near or through the UWR. This wording has been discussed with representatives of the Ministry of WLAP[4] to ensure that consistency with the wildlife objective and associated notice is achieved.

Note that management for wildlife also occurs through strategies and results that are provided in other sections within this FSP:

Result **TSK-KA-20** discusses retention of trees in RMZs, which will benefit riparian habitats. This result, when tied with the practice requirements for riparian areas (*FPPR s. 47-51, 52(2), 53*) is consistent with the objective and notice for Coastal Tailed Frog.

Strategy **TSK-KA-23** provides for retention of old growth across the landscape, which is particular benefit to grizzly bear and marbled murrelet *(Accounts and Measures for Identified Wildlife – Marbled Murrelet, Grizzly Bear; 2004)*.

SD2.4 Water

SD2.4.1 General information

Water protection issues focus on the maintenance of water quality throughout the area in this plan. It is the intent of BC Timber Sales to conduct activities in a manner that minimizes any adverse effects on water quality and maintains the aquatic biological productivity of fish streams. By following the default provisions for riparian classes, as described in section 2.4 of the FSP, adequate buffers will be retained along streams, wetlands and lakes to protect water quality and fish habitat (as per section 2.4.5 of the FSP).

There are many ways to conduct development activities to minimize adverse affects on water quality:

1. For roads in a partially built state, maintain drainage and stability at season's end.
2. Conduct road construction operations during appropriate construction windows.
3. Conduct road construction operations in snow-free conditions (except winter roads).
4. Ensure adequate yarding deflection has been achieved during the engineering phase.
5. Conduct winter ground-based harvesting operations on frozen ground and/or sufficient snowpack in areas of wet ground and/or fine-textured soils.
6. Utilize site sensitive ground-based harvesting systems during summer operations where soil conditions dictate.

Immediate action will be taken to mitigate any adverse impacts on water quality and fish habitat that may occur during forestry operations.

Review of the objectives set by government for water, as described in section 2.4 of the FSP, shows that as of October 2005, the only objectives that apply to this FSP are those set in regulation: there are no objectives enabled by regulation, nor are there any land use objectives.

[4] L. Reese-Hansen, MWLAP – Terrace (May 9, 2005); D. Fillier, MWLAP – Smithers (May 11, 2005)

SD2.4.2 Riparian Management Areas

Riparian Management Areas (RMAs) are areas adjacent to streams, lakes and wetlands that are classifiable under the *Forest and Range Practices Act*. RMAs contain both high value timber and non-timber resources. Depending on the riparian classification, the RMA consists of a Riparian Reserve Zone (RRZ) and/or a Riparian Management Zone (RMZ). The identification and assessment of the RMA habitat and its incorporation into operational plans is critical to the management and conservation of riparian resources.

The objective of the RMA is to conserve intact riparian habitats across the landscape and to protect those plants, animals and ecosystems that are dependent on riparian habitats. All classifiable riparian features will have a RMA established and any forestry operations prescribed within the RMA will ensure the conservation of water quality, fish and wildlife habitat, and biodiversity.

BC Timber Sales has elected to follow the defaults outlined in sections 47 through 51, section 52(2), and section 53 of the Forest Planning and Practices Regulation, as noted in section 2 of the FSP. This is consistent with the objective set by government for water within riparian areas (FPPR section 8).

These defaults can be summarised as follows (refer to the actual legislation for full details):

Streams

Riparian Class	*Stream width*	*Fish stream*	*RMA - Riparian Management Area (slope distance)*	*RRZ - Riparian Reserve Zone (slope distance)*	*RMZ - Riparian Management Zone (slope distance)*
S1-A	*> 100 m*	*Yes*	*100 m*	*0*	*100 m*
S1-B	*20 - 100 m*	*Yes*	*70 m*	*50 m*	*20 m*
S2	*5 - 20 m*	*Yes*	*50 m*	*30 m*	*20 m*
S3	*1.5 - 5 m*	*Yes*	*40 m*	*20 m*	*20 m*
S4	*< 1.5 m*	*Yes*	*30 m*	*0*	*30 m*
S5	*> 3 m*	*No*	*30 m*	*0*	*30 m*
S6	*< 3 m*	*No*	*20 m*	*0*	*20 m*

Retain enough trees (in riparian management zones) to maintain channel stability along S4, S5, and S6 streams that are direct tributaries to S1, S2, or S3 streams

Wetlands

Riparian Class	*Wetland area*	*RMA (slope distance)*	*RRZ (slope distance)*	*RMZ (slope distance)*
W1	*> 5 ha*	*50 m*	*10 m*	*40 m*
W2	*1 – 5 ha (CWHxm/dm/ds)*	*30 m*	*10 m*	*20 m*
W3	*1 – 5 ha (other)*	*30 m*	*0*	*30 m*
W4	*0.25 - 1 ha (CWHxm/dm/ds); 0.5 – 1 ha (other)*	*30 m*	*0*	*30 m*
W5	*Complex of wetlands > 5ha*	*50 m*	*10 m*	*40 m*

Lakes

Riparian Class	*Lake area*	*RMA (slope distance)*	*RRZ (slope distance)*	*RMZ (slope distance)*
L1-A	*> 1000 ha, or designated*	*0*	*0*	*0*
L1-B	*5 – 1000 ha*	*10 m*	*10 m*	*0*
L2	*1 – 5 ha (CWHxm/dm/ds)*	*30 m*	*10 m*	*20 m*
L3	*1 – 5 ha (other)*	*30 m*	*0*	*30 m*
L4	*0.25 - 1 ha (CWHxm/dm/ds) 0.5 – 1 ha (other)*	*30 m*	*0*	*30 m*

Retain trees in riparian reserve zones (unless specific conditions apply)

Locate roads outside of riparian management areas, except at stream crossing

Where wildlife trees and/or wildlife tree patches are required to be retained within a cut block, the RMA will be reviewed for wildlife trees and/or wildlife tree patch designation prior to considering areas outside the RMA.

Part of the challenge when managing and conserving RMA habitat in the Kalum Forest District is managing the risk of windthrow. In some cases, it may be more beneficial to clear cut immediately up to the riparian feature to avoid having retained timber blow down and negatively impact water quality or the habitat. In other cases, the habitat value may be high enough to warrant prescribing a wider RMZ than the minimum. Strategies for reducing the risk of windthrow will be considered where the windthrow risk in the RRZ is moderate to high. Any windthrow management strategy will consider the non-timber resource values in the RMA.

Fall and yard away is employed where possible on S5 and S6 streams. Any yarding over fish streams will include full suspension or other measures that protect bank stability and do not introduce deleterious substances into the stream. Safety and windthrow potential will also be considered before prescribing retention of trees that can not be felled and yarded away since in some cases controlled falling and yarding may have less impact on the stream's habitat than uncontrolled windthrow. Where falling and yarding away is not possible, actions will be taken to limit the impact on stream banks. This may include: falling trees across so that the butt log clears the channel or the stem spans both stream banks; lifting out only those portions of the stem that can be removed without damaging the stream channel; retaining portions of the log on site as large organic debris (as long as the remaining portion of the log does not obstruct stream flow or fish passage). If the stream is within a gully then the management of the gully system must be assessed on a site-specific basis.

Stream clean-out will be considered where harvesting debris enters the high water mark of a stream channel and has the potential to negatively impact either:

- stream bank or channel stability, or
- immediate or down stream water quality or fish habitat.

Where introduced harvesting debris is stable and will not negatively impact the riparian resource it will not be required to be removed.

When harvesting and/or debris removal is planned within a gully, a gully assessment can prescribe how to conduct operations within the gully.

General Management Practices

The following identifies some of the common practices that will generally be prescribed in RMZs.

Riparian Classification	*General Management Practices*
S1, S2, S3 streams	The primary objective of the RMZ for these streams is to reduce the risk of windthrow in the reserve zone, and provide opportunities for meeting wildlife tree objectives. Generally, no harvesting will occur in RRZs except for road construction, the clearing of full suspension yarding corridors, the falling of danger trees, or other activities to meet the management objectives of non-timber resources. Salvage operations may occur where the operation results in a condition that is consistent with the management objectives of non-timber resources in the RRZ. Where there is a moderate to high risk of windthrow in the RRZ, feathering of the RMZ will be considered where suitable wind firm trees exist in the RMZ. Where no suitable wind firm trees exist, other treatments such as top pruning or crown thinning treatments may be prescribed within the RMZ and/or RRZ. Where these treatments are not suitable for protecting the RRZ from windthrow, options for the relocation and/or redesign of the boundary will be considered. Retention within the RMZ will be as per Result **TSK-KA-20**
S4 streams	Where required to maintain stream bank stability, to protect fish habitat, and maintain down stream water quality, and where wind firm trees exist, a sufficient number of trees will be retained, otherwise all merchantable trees may be harvested. Non-merchantable trees, understory deciduous trees, shrubs, and herbaceous vegetation within ~5 m of the stream channel will be retained to the fullest extent possible. Retention within the RMZ will be as per Result **TSK-KA-20**
S5, S6 streams	Where required to maintain stream bank stability and maintain down stream water quality, and where wind firm trees exist, a sufficient number of trees will be retained, otherwise all merchantable trees may be harvested. Non-merchantable trees, understory deciduous trees, shrubs, and herbaceous vegetation within ~5 m of the stream channel will be retained to the fullest extent possible. Retention within the RMZ will be as per Result **TSK-KA-20**
Wetlands and Lakes (all classes)	For those lakes and wetlands that have a RRZ, the primary objective of the RMZ is to maintain the integrity of the RRZ. Where there is a moderate to high risk of windthrow in the RRZ, feathering of the RMZ will be considered if suitable wind firm trees exist in the RMZ. Where suitable wind firm trees do not exist for protecting the RRZ from windthrow, options for the relocation and/or redesign of the boundary will be considered. For lakes and wetlands without a RRZ, the RMZ will function to maintain important wildlife habitat values adjacent to the riparian feature. The distribution and level of retention within the RMZ will be dependent on the site characteristics, stand conditions, windthrow hazard management, and wildlife habitat features. Important wildlife features such as major game trails, licks, denning sites and moist understory vegetation habitat will be buffered to maintain cover or visual screening. Lakes and wetlands without a RRZ, within the RMZ non-merchantable trees, understory deciduous trees, shrubs, and herbaceous vegetation within ~5 m of the lake or wetland feature will be retained to the fullest extent possible. Retention within the RMZ will be as per Result **TSK-KA-20**

SD2.4.3 Lakeshore Management Zones

In accordance with the *Government Actions Regulation* (GAR) section 6, the Minister of Forests can specify lakeshore management areas and objectives. However, as of October 2005, no lakeshore management zones have been established within the area covered by this FSP.

SD2.4.4 Community watersheds

In accordance with GAR section 8, the Minister of Agriculture and Lands can designate a community watershed, and the Minister of Environment can specify water quality objectives for a community watershed.

The following is a list of known community Watersheds in the Kalum Forest District (and the community the water is supplied to):

Community Watershed	*Forest Development Unit*
Deep Creek (Terrace)	Terrace (Deep-Eneek sub-unit)
Spring Creek (Terrace)	Terrace (Deep-Eneek sub-unit)
Drake Creek (Thornhill Mountain)	Terrace (Thunderbird-Williams sub-unit)
Eneeksagilaguaw Creek (Kitsumkalum)	Terrace (Deep-Eneek sub-unit)
Virginia Brook (Thornhill-Queensway)	Terrace (Thunderbird-Williams sub-unit)
Wathl Creek (Kitamaat Village)	n/a
Gitzyon Creek (New Aiyansh)	n/a
Kas Miintl Am Hawak Creek (Gitwinksihlkw)	n/a

BCTS has FDUs that overlap the Deep Creek, Spring Creek, Drake Creek, and Eneeksagilaguaw Creek Community Watersheds. The other watersheds listed above are provided for information only.

As of October 2005, there are no established water quality objectives for community watersheds within the area covered by this FSP.

Preliminary (non-legal) water quality objectives were identified for the Lakelse Lake and lower Kitimat River areas; however, these are not related to community watersheds, and were introduced in the 1980's. The objectives for soils and water, and the associated strategies and results, should successfully address these non-legal objectives.

Down stream from the community watershed boundaries there are a number of domestic water supply licence holders, and Fisheries and Oceans Canada has a water licence for use in the Deep Creek Fish Hatchery. There are also a number of other domestic water supply intakes within the Kalum District, and locations of domestic water licensees are identified on the FSP maps.

Deep Creek and Spring Creek

A Coastal Watershed Assessment Procedure (CWAP) was completed for Deep Creek and Spring Creek community watersheds in the spring of 1999: the result was a finding that a 25% and 30% equivalent clear cut area is an appropriate threshold for Spring Creek and Deep Creek Community Watersheds respectively. Recommendations were made at both the sub-basin and watershed level. BCTS will not exceed the equivalent clear cut area thresholds recommended at either level. It is important to note that for these Community Watersheds a factor of 1.5 is applied to each hectare to calculate equivalent clear cut areas. On the ground, this means that approximately 17% and 20% of the respective areas may be in a non-hydrologically greened up state (i.e. recently harvested).

The CWAP for Deep and Spring Creeks was conducted prior to a major windthrow event. Activities have been consistent with the results and recommendations of the watershed assessment, with two exceptions, both in a response to salvaging a large area of windthrow: 1) the Spring Creek road (Deep Creek FSR) was upgraded and modified to support hauling and, 2) a new road was constructed upstream from the Deep Creek point of diversion.

An assessment to review any potential impacts of the salvage operations would be of value. If the review confirms that development can occur in the area with no negative impact on water quality and quantity, additional development within the watersheds will be considered.

To maintain water quality, the City of Terrace does not want an increase in recreation activity within the Spring Creek and Deep Creek Community Watersheds. When there are no forestry operations in these Community Watersheds the Spring Creek road (Deep Creek FSR) gate will be locked. The City of Terrace owns this gate.

To minimize the risk of sedimentation, BC Timber Sales plans to ensure the application of high standard road construction that includes but is not limited to using silt fencing or traps, grass seeding to promptly revegetate exposed cut slopes, and other erosion prevention measures as identified in the terrain stability field assessment/ sediment control plan.

Where timber reserves are prescribed to maintain water quality, windthrow hazard assessments may be conducted to determine if edge/stand treatments such as feathering, pruning, and/or topping are required to mitigate wind throw potential.

BC Timber Sales is planning to continue to fund the collection of hydrological data from the existing Water Survey of Canada water gauge on Deep Creek. The data collected will be analysed to monitor any changes in flow levels and if there is a significant change to flow levels, plans and operations will be adjusted to mitigate any impacts on the water resource.

Kalum LRMP and Proposed Community Watersheds

The Kalum LRMP identifies the following objectives for Community Watersheds:

- Maintain water quality to meet Canadian Drinking Water Standards through minimizing water turbidity, sediment, and other contaminants,
- Manage access into Community Watersheds to maintain water quality, and
- Maintain the quality and flow of water in Community Watersheds within their natural range.

The FSP strategy and results **TSK-KA-18** and **TSK-KA-21** are consistent with these objectives.

New Community Watersheds were proposed under the Kalum LRMP:

Proposed Community Watershed	***Forest Development Unit***
Carlotta Creek (Rosswood) - called "Clear Creek" in the Kalum LRMP	Terrace (Big Cedar sub-unit)
Skovens Brook (Usk)	n/a
Singlehurst Creek (Kleanza)	n/a
Gossen Creek (Gossen subdivision)	n/a
Hatchery Creek (East Lakelse Lake)	n/a

While the Carlotta Creek area is not a designated community watershed, BCTS recognizes the domestic water supply as a valued resource in the Rosswood area. BCTS will practice care with respect to water quality during timber harvesting operations in this area: this means the maintenance of water quality and quantity is the primary objective during timber harvesting operation. We will ensure that water quality is not compromised during road construction, timber harvesting, and road deactivation operations. If the Carlotta Creek watershed is designated as a community watershed, the strategies and results will apply.

SD2.4.5 Other watersheds

Hirsch Creek

Hirsch Creek is not a designated or proposed community watershed; however, some issues were raised with this watershed during Forest Development Planning. An analysis was conducted to determine the equivalent clear-cut area within the Hirsch Creek watershed. Equivalent clearcut area (ECA) is the area that has been harvested, cleared or burned, with consideration given to the silviculture system, regeneration growth, and location within the watershed.

The analysis determined that there is only 3,905 hectares equivalent clear cut area, or 8% of the entire watershed, and only 519 hectares equivalent clear cut area, or 4%, of the BCTS operating area (North Hirsch). A Watershed Assessment Procedure (WAP) is best applied on a watershed where a potential for cumulative impacts exists, for example, where 20% of the watershed's area has been logged during the past 25 years.

Lakelse River/ Williams Creek

Lakelse River and Williams Creek are not designated or proposed community watersheds; however water quality concerns are an issue for the protection of the fish resource. Special practices were recommended through the Kalum LRMP around the Lakelse River (result **TSK-KA-22**). A sockeye recovery plan is being put into place for the Williams Creek area, and sediment source mapping and channel assessment work that is under way will provide insight into Williams Creek water quality.

SD2.4.6 Information specific to the strategies and results

FSP Strategy and Result Reference number: **TSK-KA-18**

By taking guidance for timing windows from the *User's Guide to Working in and Around Water* document, best management practices will be followed. The *User's Guide* is a publication of the MOE, and no additional documentation is necessary with respect to this strategy and result. A summary of the timing windows for the area that the BCTS FDUs fall within (Region 6) is provided in **Appendix SDB**.

Consistency with the objective for water in riparian areas (FPPR s. 8) is achieved through timing of activities that will maintain water quality for fish habitat, and through the practice requirements for riparian areas (*FPPR s. 47-51, 52(2), and 53*).

FSP Result Reference number: **TSK-KA-19**

This result has been paraphrased from the Kalum LRMP (*Upper Copper Special Resource Management Zone*, section 3.1.1), and limits impacts to riparian areas in an area known to be subject to human activities.

FSP Result Reference number: **TSK-KA-20**

In accordance with the FPPR section 12(3), the retention of trees within Riparian Management Zones is addressed. A method for approximating basal area is provided, and the result is worded to reflect the need for flexibility with respect to site specific conditions. Providing for the retention of trees within riparian management zones achieves consistency with the objective for riparian areas (FPPR s. 8).

FSP Result Reference number: **TSK-KA-21**

This strategy and result has been taken from the Kalum LRMP. The LRMP consulted experts on the specific issues, including the Regional Hydrologist from the MoF. The use of clearcut equivalency is a useful surrogate for maintenance of flow regimes. Where a WAP is conducted that indicates a better threshold or parameter, it will be adopted for the appropriate watershed(s).

Consistency with the objective for water in community watersheds (FPPR s. 8.2) is achieved by ensuring that a well-defined parameter is used to monitor the potential impact on the watershed.

Note that management for water also occurs through strategies and results that are provided in other sections within this FSP:

Result **TSK-KA-01** places limitations on cumulative harvest impacts in Alwyn Creek, and therefore limits the potential for sediment to RMAs

Result **TSK-KA-22** limits activities within an area adjacent to the Lakelse River, therefore providing protection to the riparian management area around that river.

SD2.5 Fish

SD2.5.1 General information

The fisheries resource in the Kalum Forest District is an important resource in the area. Anadromous salmonids are found in nearly all main river systems. Non-anadromous salmonids are also present in most large creeks and rivers that have a low gradient (<20%). The resource supports a commercial, recreational, and a First Nation's fishery.

Review of the objectives set by government for fish, as described in section 2.5 of the FSP, shows that currently the only objectives are those set in regulation: there are no objectives enabled by regulation, nor are there any land use objectives. The Kalum LRMP, while not a higher level plan, provides some guidance with respect to water:

- Manage resource development activities to minimize negative impacts on surface and ground water quality for flora, fauna, domestic, commercial and industrial users
- Manage human activities to maintain hydrological stability.
- Protect life and property from hydrological events.
- Manage human activities to maintain or enhance water quality and minimize water pollution.
- Manage lakes for water quality, fisheries, wildlife, recreation, and other resource uses.

The Ministry of Environment and the federal Department of Fisheries and Oceans are the government agencies responsible for managing the fisheries resource. These agencies have the mandate to ensure that the productive capacity of fish bearing waters is maintained. BCTS is committed to maintaining the aquatic biological productivity of all anadromous and resident fish bearing streams within the Forest Development Units. This will be achieved through the identification of fish streams and proper planning designed to avoid damage to fish habitat.

The FSP is referred to MOE and DFO for their comments. Operational concerns or issues raised by these agencies may lead to field trips to review areas of concern or special significance.

Riparian inventories that provide riparian classifications within the BCTS operations' watersheds have been conducted. These assessments gathered together existing information, local knowledge and topography, allowing the determination of riparian classifications. BCTS has erred on the side of caution when assigning classifications and it is likely that we have identified more fish bearing streams than actually exist. This classification strategy ensures a conservative approach to managing the fisheries resources. Block specific riparian assessments are also completed as required as part of the site plan fieldwork. These assessments will confirm overview riparian classifications as well as classify additional riparian features not found at the overview scale.

The operating windows identified in the *A User's Guide to Working in and Around Water* document produced by the Ministry of Environment will be considered as "best available information". Any operations conducted outside these identified windows will include additional measures, as required, to ensure fish and fish habitat are protected.

Road construction, modification, maintenance, deactivation and timber harvesting operations will utilize techniques required to minimize any sediment entering known fish streams or streams that flow directly into known fish streams.

During operations, BC Timber Sales will provide contractors with any special practices and measures to ensure stream bank integrity is maintained and fish habitat is protected. Regular road maintenance, repair and cleaning of debris from culverts and streams, and careful logging practices are all ways to ensure that fish habitat is not adversely impacted.

SD2.5.2 Riparian Management

Riparian areas occur adjacent to streams, lakes and wetlands. These include areas dominated by continuous high moisture content and the adjacent upland vegetation that exerts an influence upon them. Riparian management focuses on the maintenance of riparian zones for fishery, water and wildlife resources. The primary objective is to minimize or prevent impacts to these important resources.

The FSP provides for two components for riparian management areas (RMA), i.e. riparian reserve zones (RRZ) and riparian management zones (RMZ) - see tables in section SD2.4 above. Usually, timber harvesting is not permitted in riparian reserve zones; however, harvesting can occur in riparian management zones although constraints may apply.

SD2.5.2.1 Streams

The critical consideration for streams is maintenance of stream bank integrity. Generally, this is accomplished through the RMA, which is defined in the default criteria for riparian areas (as noted in section 2 of the FSP). For streams without an RRZ, BCTS will maintain streambank integrity through careful logging practices (e.g. fall and yard away), location of machine-free zones, or retention of some amount of stems around the stream. This last method is commonly referred to as basal area (BA) retention. The amount of retention will vary for different stream types, but the most important streams that BA retention would apply to are S4 streams, as they are fish-bearing but do not have an RRZ.

For S1, S2, and S3 streams, no harvesting activity will be planned in the riparian reserve zones. A range of basal area retention in riparian management zones may occur depending upon the windthrow hazard. While the limits are defined in Result **TSK-KA-20**, the location of the retention is a site specific issue and will be determined at the field layout stage. Reserve zones for S4, S5 and S6 streams are not required, but may be established in order to maintain windfirm trees for streambank stability. This will also be assessed at the field layout phases.

Forest development may occur in close proximity or adjacent to all stream classes (S1 - S6). However, S6 streams represent the majority of the streams encountered throughout the licence area. The basal area retention prescribed at the stand level (e.g. site plan) may vary and is dependent on a multitude of site specific factors, including:

1. Harvest system utilized.
2. Existing topography of adjacent wetted perimeter and upland ground.
3. Windthrow risk.
4. Timber soundness/safety concerns.
5. Stream/reach value.
6. Wildlife habitat value.
7. Erosion/sedimentation/stability risk.

For all stream classes, BCTS does not attempt to address the level of basal area retention in riparian management zones in a spatially uniform manner. BCTS accomplishes riparian management zone retention by extending reserve (no harvest) zone boundaries into management zone areas. Extended reserve zones are a common occurrence since site specific factors, such as natural topographic features (e.g. top of gorge/gully) and stand structural changes play a significant role in the location of harvesting boundaries.

To manage and conserve the timber and non-timber resources within RMAs, various management prescriptions will be prescribed, and where timber harvesting is planned a variety of silviculture systems and/or treatments will be prescribed. As a minimum, the widths of RMAs will follow those specified in the FSP. Wider RMAs will be prescribed when required to manage and conserve high valued riparian habitat, e.g. a sensitive fish population, or to protect unstable stream banks. Site specific strategies will be determined during site plan and/or road layout and design preparation.

During the planning stage, streams and riparian areas within or adjacent to proposed cutblocks and roads will be identified and classified in accordance with this FSP. The location of fish bearing streams will be clearly marked on operational maps, and where necessary, appropriate machine free zones may also be prescribed. The FSP also provides for riparian reserves and riparian management zones. Stream classifications shown on maps are based on RIC[5] and non-RIC standard fisheries inventories and field assessments of individual cutblocks.

SD2.5.2.2 Wetlands and Lakes

The same approach to riparian zone boundary determination will be utilized for wetlands and lakes as described in the section SD2.5.1.1 above. Stand structural changes and natural topographic features also play a key role in the location of management zone boundaries.

For all classes of wetlands and lakes, the minimum level of basal area retention is noted in Result **TSK-KA-20.**

SD2.5.3 Fisheries Sensitive Watersheds

In accordance with section 14 of the *Government Actions Regulation*, the MOE can identify a fisheries sensitive watershed and set objectives for such a watershed. However, there are no fisheries sensitive watersheds in the area covered by the FSP.

SD2.5.4 Information specific to the strategies and results

There are no strategies or results that apply exclusively to fish or fish habitat.

Note that management for fish also occurs through strategies and results that are provided in other sections within this FSP:

Result **TSK-KA-01** places limitations on cumulative harvest impacts in Alwyn Creek, and therefore limits the potential for sediment to RMAs

Strategy and Result **TSK-KA-18** places limitations on the timing of activities around fish streams.

Result **TSK-KA-19** has been paraphrased from the Kalum LRMP, and limits impacts to riparian areas in an area known to be subject to human activities.

Result **TSK-KA-20** describes retention levels in RMZs, which will often provide additional protection or buffering to fish habitat.

Result **TSK-KA-22** limits activities within an area adjacent to the Lakelse River.

SD2.6 Biodiversity

SD2.6.1 General information

Biodiversity (biological diversity) is the diversity of plants, animals, and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them. Two levels of biodiversity are considered: landscape and stand level. At the landscape level, watershed areas are amalgamated into Landscape Units, which are assigned either a low, medium, or high biodiversity emphasis in which "high" has the greatest importance for managing and conserving biological diversity. Stand level biodiversity is more site specific and includes the requirement to retain wildlife tree patches across the landscape, but also may include designating old growth management areas (OGMAs).

[5] Resource Inventory Committee

Review of the objectives set by government for biodiversity, as described in section 2.6 of the FSP, shows that there are objectives set in regulation, (FRPA sections 8, 9, and 9.1); there are no objectives enabled by regulation. With respect to land use objectives, the Minister of Sustainable Resource Management (now MOE) made an *Order Establishing Provincial Non-Spatial Old Growth Objectives*, effective June 30, 2004.

SD2.6.2 Landscape-level Biodiversity

SD2.6.2.1 Old Growth

The *Order Establishing Provincial Non-Spatial Old Growth Objectives*, effective June 30, 2004, establishes landscape units (LU) and biodiversity emphasis for each LU, and retention levels for old growth by natural disturbance type. The Order requires an analysis of each LU with respect to the amount of old growth remaining by biogeoclimatic ecological classification.

Mature (older than 120 years) and old growth (older than 250 years) forests are represented on the FSP maps by the "other Crown forests" category. Most of these forests are old growth.

The Strategy **TSK-KA-23** addresses the Old Growth Order by providing a process that is consistent with the targets in the Order, and by allowing for the designation of spatial old growth management areas (OGMAs). Strategy and result **TSK-KA-15** also incorporates the amount of old growth in the analysis of seral stages by LU.

SD2.6.2.2 Cut blocks or patches larger than 60 hectares

BCTS has elected a practice requirement (*FPPR s 64*) that restricts cutblocks to a maximum size of 60 ha, unless they are designed to be consistent with the structural characteristics and the temporal and spatial distribution of natural openings.

- Patch size distributions for each FDU are being developed in accordance with strategy and result **TSK-KA-15**. The target patch size distributions will be identified. The goal is to plan development within operating areas so the distributions move towards target levels over time, though they may not be achieved during the term of this FSP.
- A seral stage distribution is being developed in accordance with strategy and result **TSK-KA-15** for each BEC variant by draft Landscape Unit (for areas within FDUs only). The target seral stage distribution will be identified. The goal is to plan development within operating areas so the distribution moves towards target levels over time, though it may not be achieved during the term of this FSP.

SD2.6.3 Stand-level Biodiversity

SD2.6.3.1 Coarse woody debris

Coarse woody debris is important for many types of organisms in order to maintain a presence within the area. The timber stands within the FSP area are predominantly overmature and decadent. These overmature stands exhibit various stages of decay, which contributes to higher amounts of coarse woody debris on the site prior to harvesting activities. The nature of these forests means that a high level of non-merchantable material is typically left on site. During harvesting, additional breakage of trees occurs and is often left on a site, as most is unmerchantable.

Thriftier second growth stands will retain less CWD after harvesting compared to the typical over mature hemlock/balsam stands in the district. Managing the recruitment of CWD is most important within managed second growth stands where CWD may be otherwise limited. Required levels of CWD retention are described in section 68 of the FPPR.

Where site occupancy and fire hazard are not significant concerns, BC Timber Sales will attempt

to avoid practices such as piling and burning (except for landings), and will not conduct broadcast burning within the FSP area. These actions will provide essential habitat for those organisms that are dependent on coarse woody debris.

SD2.6.3.2 Wildlife Trees

At the stand level, important stand structural attributes will be preserved through the retention of wildlife tree patches and individual wildlife trees. Snags, culls and veterans provide valuable habitat for cavity nesting birds, raptors and small mammals while contributing to vertical density. Measures that were previously listed under water (section SD2.4), wildlife (section SD2.3), and fish (section SD2.5) contribute to the management of biodiversity.

To achieve stand level biodiversity objectives within the FDUs in the Kalum TSA, TFL 1, and TFL 41, wildlife tree retention will follow the guidance from Table 6 in the *Draft Kalum Sustainable Resource Management Plan* (SRMP), September 2005 (see **Appendix SDE**). In accordance with this table, the amount of individual wildlife trees or groups of trees in WTPs to be retained within cutblocks and/or adjacent to cutblocks is described by Landscape Unit. The retention amounts in the SRMP were directed by the Kalum LRMP, and allow for the retention amount to be calculated over a "harvest unit" – a grouping of blocks that are close to each other. Since the SRMP provides direction on wildlife tree retention on all but the Kowesas Landscape Unit, the default practices (FPPR s. 66, 67) for wildlife tree retention will not apply on the Terrace, Kitimat Valley, or Douglas-Gardner FDUs.

A separate SRMP is being prepared for the Kowesas; however, as of November 2005, it is not near completion, so no wildlife tree retention figures are available. Therefore, the default practices (FPPR s. 66, 67) for wildlife tree retention have been elected.

For the Nass FDU, default practices (FPPR s. 66, 67) for wildlife tree retention have been elected.

WTPs are planned on a site-specific basis and usually identified first during the reconnaissance phase of block layout. Wherever possible, WTPs will be located in constrained areas such as: inoperable areas, riparian management areas, unstable terrain, gullies, and scenic areas.

The following are characteristics and habitat attributes that are looked for when evaluating the wildlife habitat of individual trees:

- internal decay,
- crevices,
- large brooms,
- active or recent use,
- current insect infestation,
- large nests,
- hunting perch,
- bear den,
- largest tree on site,
- locally important tree species.

Areas with a range of tree species and sizes will be prescribed for WTP designation before areas with a simple stand structure. Wildlife tree patches will be designed to protect those trees with valuable wildlife tree attributes. If there are no wildlife trees within or adjacent to a cutblock then WTPs will be located for long-term recruitment of wildlife trees and/or CWD, or as a minimum be representative of the pre-harvest stand conditions. This may result in the inclusion of both deciduous and coniferous species in the WTP. Where practicable, WTPs will be located in areas that would contribute to the conservation of rare plant communities and ecosystems.

WTPs will be located and designed to reduce the risk of windthrow. In high windthrow risk areas, WTPs will be designated in the most wind firm timber, or WTPs will be designated in areas of lower habitat value but in a more wind firm location. Timber with a relatively low height to diameter ratio will be identified for WTP designation wherever practicable. It is expected and biologically acceptable to have some windthrow on the fringe of WTPs.

Wildlife tree patches should be retained for a minimum of one rotation. Minor salvage will generally not occur in WTP areas, but if there is to be some salvage of a WTP, it will be replaced with equivalent suitable habitat as close to the original WTP as possible. Since one of the objectives of retaining WTPs is to recruit future CWD, WTPs will not be replaced if they are subject to windthrow and not salvaged.

SD2.6.4 Information specific to the strategies and results

FSP Result Reference number: **TSK-KA-22**

This strategy and result is taken from the Kalum LRMP, which recognized the importance of the Lakelse River area. Consistency with the biodiversity objectives is achieved by detailing seral, patch, and wildlife tree retention requirements on a specific area that has been identified as of particular importance through public planning processes.

FSP Strategy Reference number: **TSK-KA-23**

This strategy and result describes a seral stage and patch size distribution process that will allow consistency with the biodiversity objective over the FDUs in this FSP.

FSP Result Reference number: **TSK-KA-24**

This strategy and result is guided by the *Draft Kalum Sustainable Resource Management Plan* (SRMP), September 2005, as translated from the Kalum LRMP by the SRMP committee. Since these WTP targets are driven by the cabinet approved Kalum LRMP, the impact on timber supply would be considered acceptable, and is therefore not detailed here.

Table 6 from the Draft Kalum SRMP, which provides the wildlife tree retention figures, is provided in **Appendix SDE.**

Note that management for biodiversity also occurs through strategies and results that are provided in other sections within this FSP:

Result **TSK-KA-03** provides for stocking standards which are biologically based and will ensure that appropriate forest species choices are made.

Result **TSK-KA-05** provides for a plan at a landscape level (as opposed to the LRMP, which is at the sub-regional level), which will therefore give more detailed consideration to landscape and stand level biodiversity.

Results **TSK-KA-09**, **TSK-KA-10**, and **TSK-KA-11** provide for a wildlife corridor to allow for species movement, thereby also benefiting biodiversity

Result **TSK-KA-20** describes retention levels in RMZs, which will provide additional diversity within RMAs.

Result and strategy **TSK-KA-15** provide for a distribution of seral stages and patch sizes across larger areas, providing for diversity at the landscape level.

SD2.7 Cultural heritage resources

SD2.7.1 General information

Cultural heritage resources include aboriginal interests and traditional practices, and archaeological sites. Aboriginal interests and traditional practices generally include the use of lands for specific activities integral to the culture of aboriginals. Archaeological resources are sites that contain evidence of past human activity. BC Timber Sales, in consultation with affected parties, will manage archaeological resources within BCTS operating areas in accordance with the *Forest and Range Practices Act* and the *Heritage Conservation Act*.

To facilitate preparation of this FSP, traditional use information is reviewed. Where traditional use information is not available, it is requested from the First Nation group(s) and/ or the Ministry of Forests under strategy **TSK-KA-28**. This information is held in confidence, and is only used in the development of appropriate strategies or results. These strategies or results may not show up under the cultural heritage heading, as they may relate to first nation concerns over wildlife, fish, or another forest value. Result **TSK-KA-28** provides a time constrained outcome that proactively defers the issuance of Timber Sale Licences (TSLs) under this FSP for the short-term, while waiting on the completion of a joint planning process that includes the Gitanyow First Nation, the MoF, ILMB, licensees, and BCTS. Note: until the FSP is approved, TSLs may still be issued under BCTS' Forest Development Plan (FDP), as Category A blocks in the FDP were approved earlier.

BC Timber Sales has also elected as a strategy **TSK-KA-29** and result **TSK-KA-30** to ensure that cultural heritage is considered in all activities by using traditional use information obtained from representatives of First Nations' groups, or Archaeological Overview Assessment information for the FSP area, to determine the need for site visits and archaeological impact assessments. In addition, by ensuring that field layout crews are aware and trained in identification of cultural features, BCTS also minimizes the risk that cultural heritage resources will remain unidentified.

Result **TSK-KA-31** reflects input from several First Nations on the cultural importance of Cedar and Cypress to traditional activities.

Section SD5 describes the interaction between BC Timber Sales and the First Nations groups that have made claim to the area covered by this FSP.

The Ministry of Forests had an archaeological overview assessment completed to determine the potential of archaeological resources within the Kalum District. Areas are rated as high, medium or low potential. Areas with high archaeological potential will undergo an archeological impact assessment prior to applying for authority to conduct timber harvesting operations.

If archaeological impact assessments show that archaeological resources are found within an area proposed for road construction or timber harvesting, development options will be reviewed to determine what changes can be made to mitigate any detrimental impacts to the archaeological resources. These options are typically presented in the archaeological impact assessment reports. Where archaeological resources that are automatically protected by the *Heritage Conservation Act* need to be altered, an Alteration Permit will be applied for and affected parties consulted with.

This FSP is referred to the First Nations for their input and comments. BC Timber Sales has FDUs distributed throughout the district. As a result, BCTS reviews the plan with many different aboriginal groups to discuss the impacts of any aboriginal interests and traditional practices that exist on the FDUs in the Forest Stewardship Plan. The FDUs overlap the claimed territories of the Gitanyow, Gitxsan, Haisla, Nisga'a, and Tsimshian (Lax Kw'alaams, Metlakatla, Kitsumkalum, Kitselas, and Hartley Bay). The Nisga'a have a signed treaty which includes Nisga'a Lands that are not part of the Skeena Business Area. Referrals to the Nisga'a Wildlife Committee of the Nisga'a Lisims Government will be as to a government agency.

SD2.7.2 Information specific to the strategies and results

FSP Strategy and Result Reference number: **TSK-KA-28**

This strategy and result allows the identification, review, and update of traditional use and cultural heritage information that is used in the development (and if necessary, amendment) of this FSP. The result is specific to an area where a joint planning process is being conducted, and more information may be forthcoming on cultural heritage resources.

Consistency with the cultural heritage resources objective is achieved by providing a method for continual updates to known cultural heritage resource information.

FSP Strategy Reference number: **TSK-KA-29**

This strategy allows the identification and review of traditional use and cultural heritage information that has not been captured in the development of this FSP.

To ensure that cultural heritage resources are considered on the FSP area, site plans will indicate whether any new cultural heritage information was found, and how any potential impact was mitigated. For the purposes of confidentiality and protection of cultural heritage features, site plan descriptions may be purposefully vague.

Consistency with the cultural heritage resources objective is achieved by providing for stand-level mitigation of identified cultural heritage resources when necessary.

FSP Result Reference number: **TSK-KA-30**

This result confirms that traditional use and cultural heritage information that has not been captured in the development of this FSP will still be documented and reviewed by BCTS. By ensuring that the BCTS Timber Sales Manager sees any information not reviewed at the FSP stage, and by describing this information in site plans, including stand-level mitigation of identified cultural heritage resources when necessary, consistency with the cultural heritage resources objective is achieved at the stand level.

(For the purposes of confidentiality and protection of cultural heritage features, site plan descriptions may be purposefully vague.)

FSP Result Reference number: **TSK-KA-31**

This result is directly related to information provided by the Haisla, Giga'at, and Gitanyow First Nations, but is considered to apply to all First Nation groups. Cedar (and Cypress, on the coast) provides a valuable resource for traditional cultural activities: bark provides textiles, and the logs provide building materials (canoes, planks) and spiritual materials (totem poles). The stocking standards in this FSP prescribe Cedar or Cypress where ecologically appropriate, so a continued supply of trees for bark stripping purposes is ensured, as is the supply of lumber (the modern form of planks). However, to ensure the supply of larger logs for canoes, planks, or poles, this result has been prepared to ensure that in forest stands that have cedar or cypress retention in WTPs and RMZs, removal of some of these stems for cultural purposes is an acceptable activity..

Consistency with the cultural heritage resources objective is achieved by providing a method for ensuring that a supply of raw materials for traditional cultural heritage activities be maintained.

SD2.8 Recreation Resources

SD2.8.1 General information

BC Timber Sales will conserve identified recreation resource values throughout our operating areas. We will maintain the recreation resource by complying with the higher level plans established for the District's network of recreation sites and trails. We will minimize the impact timber harvesting operations may have on high value recreation areas by assessing the potential impacts and prescribe mitigating measures where necessary and practical. Where recreation inventories exist, Site Plans will identify the recreation feature significance and recreation management class for the area so its relative importance is highlighted. If necessary, measures to protect specific recreation features and resources will be identified in the Site Plan. BCTS operations proposed within or adjacent to established sites and trails will be consistent with the management objectives (Higher Level Plans) for these features. Generally, this means no harvesting activities will occur within 10 metres of the feature. If additional measures are required to conserve the value of the recreation feature, and where practical, partial cutting will be used adjacent to the 10-metre buffer. Where the Ministry of Forests is considering new sites or trails for establishment, BCTS will not propose operations that will conflict with draft management

objectives for those features.

There are recreation areas that are regularly used that do not have higher level plan objectives (e.g. End Lake and Lakelse Lake). No strategies or results are required for these sites, though they are shown on the FSP maps.

SD2.8.2 Recreation Sites and Trails with Higher Level Plan Objectives

As of October 2005, the following sites and trails on the FSP area are established with objectives in place:

- Big Cedar Recreation Trail: Terrace FDU (Big Cedar sub-unit)
- Bonney Lake Recreation Site: Nass FDU (Harper-Bonney sub-unit)
- Bonney Lake Portage Recreational Trails: Nass FDU (Harper-Bonney sub-unit)
- Clearwater Lakes Recreation Site: Kitimat Valley FDU
- Deception Lake Recreation Site: Kitimat Valley FDU
- Glory Hole Recreation Site: Terrace FDU (Kitsumkalum sub-unit)
- Hai Lake Recreation Trail: Terrace FDU (Thunderbird-Williams sub-unit)
- Jigsaw Lake Recreation Site: Nass FDU (Harper-Bonney sub-unit)
- Maroon Mountain Recreation Trail: Terrace FDU (Kitsumkalum sub-unit)
- Mt. Elizabeth Recreation Trail: Kitimat Valley FDU
- Onion Lake Recreation Trail: Kitimat Valley FDU
- Onion Lake Ski Recreation Trails: Kitimat Valley FDU
- Pine Lake Recreation Site: Terrace FDU (Kitsumkalum sub-unit)
- Pine Lake Recreation Trail: Terrace FDU (Kitsumkalum sub-unit)
- Red Sand Lake Interpretive Forest Site: Terrace FDU (Kitsumkalum sub-unit)
- Robinson Ridge Recreation Trail: Kitimat Valley FDU
- Sleeping Beauty Recreation Trail: Terrace FDU (Kitsumkalum sub-unit)
- Sterling Mountain Recreation Trail: Terrace FDU (Big Cedar sub-unit)
- Thornhill Mountain Recreation Trail: Terrace FDU (Thunderbird-Williams sub-unit)
- Weewanie Hotsprings Recreation Site: Douglas-Gardner FDU
- West Lake Recreation Site: Kitimat Valley FDU

The Deception Lake and Glory Hole recreation sites have been decommissioned.

The Sleeping Beauty Recreation Trail and Weewanie Hotsprings Recreation Site are now covered by Provincial Parks (no-harvest area), so no strategies or results are deemed necessary.

The objectives for these sites and trails are as follows:

Site or Trail	***Recreation Experience Objective***	***Site or Trail Management Objective***	***Opportunities***	***Access objectives***
Big Cedar Recreation Trail	Appropriate semi-primitive motorized winter recreational activities	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Snowmobiling	Winter motorized access Nov 1 to June 30; all motorized activities restricted July 1 to Oct 31
Bonney Lake Recreation Site	Roaded	Lake shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, angling, boating and canoeing	n/a
Bonney Lake Portage Recreational Trails	Semi-primitive non-motorized recreational experience	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing	n/a

Site or Trail	***Recreation Experience Objective***	***Site or Trail Management Objective***	***Opportunities***	***Access objectives***
Clearwater Lakes Recreation Site	Semi-primitive non-motorized	Campsite and trail will be retained; the lake shoreline and natural vegetation will be conserved.	Hiking, tent camping, picnicking, and angling	Non-motorized trail
Deception Lake Recreation Site *DECOMMISSIONED*	Roaded	Lake shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, angling and canoeing	n/a
Glory Hole Recreation Site *DECOMMISSIONED*	Roaded	Natural vegetation will be retained within site boundaries.	Swimming, picnicking, and canoeing	n/a
Hai Lake Recreation Trail	Semi-primitive non-motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing	n/a
Jigsaw Lake Recreation Site	Roaded	Shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, angling, boating and canoeing	n/a
Maroon Mountain Recreation Trail	Semi-primitive non-motorized	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Hiking and viewing	n/a
Mt. Elizabeth Recreation Trail	Semi-primitive non-motorized	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline	Hiking and viewing	n/a
Onion Lake Recreation Trail	Semi-primitive non-motorized	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Hiking, picnicking, snowshoeing and viewing	n/a
Onion Lake Recreation Ski Trails	*Winter, with snow on the ground:* Semi-primitive non-motorized *Summer, snow free season:* Roaded	Trail will be maintained and the natural vegetation will be conserved within ten metres of the trail centerline.	*Winter, with snow on the ground:* Cross country skiing *Summer, snow free season:* Hiking and mountain biking	*Winter, with snow on the ground:* No motorized use permitted, other than for track setting and trail grooming activities *Summer, snow free season:* n/a
Pine Lake Recreation Site	Roaded	Shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, hiking, canoeing, and angling	n/a
Pine Lake Recreation Trail	Semi-primitive non-motorized	Active trail, lake shoreline and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Hiking, angling, picnicking and viewing	n/a

Site or Trail	***Recreation Experience Objective***	***Site or Trail Management Objective***	***Opportunities***	***Access objectives***
Red Sand Lake Interpretive Forest Site	Roaded	Shoreline and natural vegetation will be conserved within the site boundaries. Small scale timber harvesting and silviculture practices will exist on the site as part of forest interpretation and education. Forest interpretation activities and education on local ecosystems and forest practices will be provided through brochures, self guided interpretive trails and signage.	Camping, picnicking, hiking, canoeing, biking, and angling	
Robinson Ridge Recreation Trail	Appropriate semi-primitive motorized winter recreational activities	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Snowmobiling, hiking and viewing	Winter motorized access Nov 1 to June 30; all motorized activities restricted July 1 to Oct 31
Sleeping Beauty Recreation Trail *NOW PART OF A PROVINCIAL PARK*	Semi-primitive non-motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing	n/a
Sterling Mountain Recreation Trail	Appropriate semi-primitive motorized winter recreational activities	Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline.	Snowmobiling	Winter motorized access November 1 to June 30; all motorized activities restricted July 1 to Oct 31
Thornhill Mountain Recreation Trail	Semi-primitive non-motorized	Active trail and natural vegetation will be retained within ten metres on either side of the trail centerline.	Hiking and viewing	n/a
Weewanie Hotsprings Recreation Site *NOW PART OF A PROVINCIAL PARK*	Semi-primitive motorized	Marine foreshore and natural vegetation will be retained within site boundaries. The thermal springs will be protected within site boundaries.	Bathing, camping, picnicking, angling and boat mooring	Boat access to the site is available year round, weather permitting.
West Lake Recreation Site	Roaded	Lake shoreline and natural vegetation will be retained within site boundaries.	Camping, picnicking, angling, and canoeing	n/a

SD2.8.3 Information specific to the strategies and results

FSP Result Reference number: **TSK-KA-32**

The identified recreation sites or trails all share a "Trail Management" objective. This result is basically a paraphrasing of this common objective so that it will apply for all these sites and trails, with a clarification regarding the potential need for trail re-establishment or relocation.

Consistency with the recreation site and trail objectives is achieved as the wording is taken directly from the objectives, and the trail re-establishment and relocation portion was discussed with MoF representatives (May 2, 2005).

FSP Result Reference number: **TSK-KA-33**

The identified recreation sites have similar "Site Management" objectives. This result is basically a paraphrasing of this common objective so that it will apply for all these sites and trails.

Consistency with the recreation site objectives is achieved as the wording is taken directly from the objectives.

FSP Strategy Reference number: **TSK-KA-34**

This strategy allows small-scale forest demonstrations to occur on the demonstration forest, while providing protection to the site. This is consistent with the objectives for the site.

FSP Result Reference number: **TSK-KA-35**

The identified recreation sites have similar "Access" objectives. The result is basically a paraphrasing of this objective, with a clarification regarding the potential need for access outside of the window for planning or silviculture activities.

Consistency with the recreation site and trail objectives is achieved as the wording is taken directly from the objectives, and the wording regarding access outside of the window was discussed with MoF representatives (May 2, 2005).

FSP Strategy or Result Reference number: **TSK-KA-36**

The recreation sites and trails all have a "Recreation Experience" objective that is related to general access to the sites or trails. The Deception Lake and Glory Hole recreation sites are excluded from this result as they have been decommissioned. This result confirms the minimum level of access that will be maintained to these sites or trails, ensuring consistency with the objective of providing access to a recreation experience.

Note that management for recreation also occurs through a result that is provided in other sections within this FSP:

Result **TSK-KA-19** has been paraphrased from the Kalum LRMP, and limits impacts to riparian areas in an area known to be subject to human activities.

SD2.9 Resource Features

SD2.9.1 General information

Section 5 of the *Government Actions Regulation* allows the identification of the following as resource features:

- surface or subsurface elements of a karst system;
- a range development;
- Crown land that is being used for research or experimental purposes;
- permanent sample sites used as snow courses by the Federal or Provincial government for

the purpose of measuring the water content of the snow pack on a given area;
- a cultural heritage resource that is the focus of a traditional use by an aboriginal people and that is not regulated by the *Heritage Conservation Act*;
- an interpretative forest site, recreation site or recreation trail;
- a trail or other recreation facility referred to in section 56 [*interpretive forest sites, recreation sites and recreation trails*] of the Act that is authorized by the minister or under another enactment;
- a recreation feature that the minister considers to be of significant recreational value.

Cultural heritage features are covered under section 2.7 of this FSP.

Interpretative forest sites, recreation sites, and recreation trails, including a trail or other recreation facility referred to in section 56 of the FRPA, or a recreation feature that the minister considers to be of significant recreational value, are covered under section 2.8 of this FSP.

Strategies or results are not necessary or required to provide strategic management of the remaining resource features.

As of October 2005, for the area covered by this FSP, no resource features have been identified with respect to
- surface or subsurface elements of a karst system;
- a range development;
- Crown land that is being used for research or experimental purposes; or
- permanent sample sites used as snow courses.

Various research trials and plots have been established throughout the Kalum Forest District. The locations of many of these are not mapped; however, they have been summarized in a document titled "*Kalum Forest District – Operational Trial and Study Synthesis*" (March 2002).

SD2.10 Visual Quality

SD2.10.1 General information

The Ministry of Forests has completed a landscape inventory for the Kalum and Nass TSAs. Visual quality objectives (VQOs) are objectives defining an acceptable level of alteration to a specific visual landscape unit based on the physical characteristics and public concerns.

The District Manager has "made known" established Scenic Areas with established Visual Quality Objectives throughout the Kalum Forest District, including TFL 1 and TFL 41. Prior to any development in a known scenic area, the planned development is reviewed to assess the potential impacts on the visual resource.

As of October 2005, Visual Quality Objectives are in place for these scenic areas within the area covered by this FSP:
- Highway 16 through the Kalum Forest District – Terrace FDU (Dasque, Thunderbird-Williams, Deep-Eneek, Chimdemash, and Fiddler sub-units)
- Kitsumkalum Mountain – Terrace FDU (Kitsumkalum sub-unit)
- Highway 37 South, Terrace to Kitimat – Terrace FDU (Thunderbird-Williams sub-unit), Kitimat Valley FDU
- Highway 37 North, Sideslip Lake to the Northern boundary of the Kalum Forest District – Nass FDU (Harper-Bonney, Meziadin-Kwinageese sub-units)
- Brown Bear Lake, View from the lake – Nass FDU (Harper-Bonney sub-unit)

The following scenic areas do not have visual quality objectives, but have established visual sensitivity classes:
- Nisga'a Highway, Terrace to Cedar River – Terrace FDU (Kitsumkalum, Big Cedar,

Kiteen sub-units)
- Douglas Channel, Sue Channel – Douglas-Gardner FDU
- Barrie Reach – Douglas-Gardner FDU, Kowesas FDU

For scenic areas without established VQOs, visual sensitivity class will be used as a surrogate, as follows:

Visual Sensitivity Class	***Managed to a Visual Quality Objective of:***
1	Retention
2	Partial Retention
3	Modification
4	Modification
5	Maximum Modification

The Swan Lake Wilderness Plan identified that views from Swan Lake are to be managed to a retention VQO with the maximum visible alteration being five percent. The BC Ministry of Forests has since established scenic areas for Highway 37, and it assumed that these scenic areas have captured the appropriate parts of the Swan Lake viewscape.

Visual Impact Assessments (VIAs) will be completed where development is proposed within known scenic areas. VIAs will be used to illustrate that the VQO will be met. To maximize timber development in scenic areas, BCTS will use visual landscape design techniques when designing cut blocks in highly sensitive areas. Properly designed blocks will blend development into the natural landscape. Where visual landscapes are highly sensitive, a variety of silviculture systems will be prescribed to minimize the visual impact.

The following are definitions for the individual VQO classes from the FRPA and the guidelines from the Visual Impact Assessment Guidebook (2nd Edition, January 2001) for the allowable percent alteration in perspective view for each VQO. The goal is to meet the definition of the VQO, whereas the percent alteration guideline just helps determine the relative scale of alteration on a visual landscape from clear cut or seed tree silviculture systems. Partial cutting systems have no alteration guideline as the impact will vary with the uniformity of harvesting and the percent of basal area removal rather than the size of the activity area. Refer to the Visual Impact Assessment Guidebook for specific details.

VQO	***VQO definition*** *(FPPR section 1.1)*	***% alteration guideline*** *(Visual Impact Assessment Guidebook)*
Preservation	Consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is (i) very small in scale, and (ii) not easily distinguishable from the pre-harvest landscape.	0
Retention	Consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, is (i) difficult to see, (ii) small in scale, and (iii) natural in appearance.	0 - 1.5
Partial Retention	Consisting of an altered forest landscape in which the alteration, when assessed from a significant viewpoint, is (i) easy to see, (ii) small to medium in scale, and (iii) natural and not rectilinear or geometric in shape.	1.6 – 7.0

VQO	***VQO definition** (FPPR section 1.1)*	***% alteration guideline** (Visual Impact Assessment Guidebook)*
Modification	Consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, (i) is very easy to see, and (ii) is (A) large in scale and natural in its appearance, or (B) small to medium in scale but with some angular characteristics.	7.1 – 18.0
Maximum Modification	Consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint, (i) is very easy to see, and (ii) is (A) very large in scale, (B) rectilinear and geometric in shape, or (C) both.	18.1 - 30.0

SD2.10.2 Information specific to the strategies and results

FSP Result Reference number: **TSK-KA-25**

This result is derived from guidance in the Kalum LRMP (*Fish and Fish Habitat*, section 2.2.8). Consistency with the visual objective is achieved through managing a known area of visual sensitivity. While there may be a minimal amount of timber supply impact, this impact has been inherently acknowledged in the approval of the LRMP.

FSP Strategy and Result Reference number: **TSK-KA-26**

This strategy and result is based on the Visual Impact Assessment guidebook (January 2001), with the addition of a viewpoint selection process. Consistency with the objective set by government for visual quality is achieved through the application of an established method for visual management.

FSP Result Reference number: **TSK-KA-27**

This strategy and result is based on the Kalum LRMP (*Biodiversity* section 3.7). Consistency with the visual objective is achieved through providing for continued forestry activities on a visually sensitive area.

SD2.11 Forage

SD2.11.1 General information

Forage in the context of this FSP is related to food required for livestock (i.e. for Range activities). There are no Range activities in the FSP area, and there are no objectives for Forage: and subsequently, there are no strategies or results required. Nonetheless, some of the strategies or results within the FSP may have an impact on forage for wild species.

Forage for wild species occurs naturally; however, forage for grizzly bear and for moose is managed within this FSP through reduced stocking requirements and minimum inter-tree distance when activities occur on certain plant associations. Wildlife movement through low elevation passes is maintained, allowing species to forage over their normal range. These strategies and results are captured in the FSP (results **TSK-KA-07, TSK-KA-09, TSK-KA-10, and TSK-KA-11**).

SD2.12 Cross reference of Strategies and Results to all of the FRPA Forest Values

The following table shows how the strategies and results relate to the eleven forest values as described under the *Forest and Range Practices Act*.

Y = Strategy or Result provided for this Value **A** = Strategy or Result relates to this value as well

FSP Strategy or Result Reference #	Soils	Timber	Wildlife	Water	Fish	Biodiversity	Cultural Heritage Resources	Recreation Resources	Resource Features	Visual Quality	Forage
TSK-KA-01	Y			A	A						
TSK-KA-02	Y										
TSK-KA-03		Y				A					
TSK-KA-04		Y									
TSK-KA-05		Y				A					
TSK-KA-06			Y								
TSK-KA-07			Y								A
TSK-KA-08			Y								
TSK-KA-09			Y			A					A
TSK-KA-10			Y			A					A
TSK-KA-11			Y			A					A
TSK-KA-12			Y								
TSK-KA-13			Y								
TSK-KA-14			Y								
TSK-KA-15			Y			A					
TSK-KA-16			Y								
TSK-KA-17			Y								
TSK-KA-18	A			Y	A						
TSK-KA-19				Y	A			A			
TSK-KA-20			A	Y	A	A					
TSK-KA-21	A			Y							
TSK-KA-22				A	A	Y					
TSK-KA-23			A			Y					
TSK-KA-24						Y					
TSK-KA-25								Y		Y	
TSK-KA-26								A		Y	
TSK-KA-27								A		Y	
TSK-KA-28							Y				
TSK-KA-29							Y				
TSK-KA-30							Y				
TSK-KA-31						A	Y				
TSK-KA-32								Y			
TSK-KA-33								Y			
TSK-KA-34								Y			
TSK-KA-35								Y			
TSK-KA-36								Y			

SD2.13 Cross reference of Strategies and Results to known Objectives under FRPA

The following table shows how the strategies and results relate to the known objectives that apply on the BCTS FSP area. Note that FPPR s. 8.1 (Objective in fisheries sensitive watersheds) does not apply as there are none in the FSP area. (Y = Strategy or Result identified as contributing to the achievement of the Objective)

FSP Strategy or Result , or FPPR Practice Requirement	FPPR s. 5	FPPR s. 6	FPPR s. 7(1)	Mountain Goat UWR Notice	Moose UWR Notice	Grizzly Bear Notice	Coastal Tailed Frog Notice	Marbled Murrelet Notice	FPPR s. 8	FPPR s. 8.2	FPPR s. 9	FPPR s. 9.1	Old Growth Order	FPPR s. 9.2(2)	FPPR s. 10	FPPR 12(3)	Recreation Objectives
TSK-KA-01	Y								Y								
TSK-KA-02	Y																
TSK-KA-03		Y									Y						
TSK-KA-04		Y															
TSK-KA-05		Y									Y						
TSK-KA-06			Y				Y										
TSK-KA-07			Y		Y	Y											
TSK-KA-08			Y			Y											
TSK-KA-09			Y		Y						Y						
TSK-KA-10			Y		Y						Y						
TSK-KA-11			Y		Y						Y						
TSK-KA-12			Y	Y													
TSK-KA-13			Y	Y													
TSK-KA-14			Y		Y												
TSK-KA-15			Y		Y	Y		Y			Y						
TSK-KA-16			Y	Y													
TSK-KA-17			Y	Y													
TSK-KA-18	Y								Y	Y							
TSK-KA-19									Y								
TSK-KA-20			Y				Y		Y			Y				Y	
TSK-KA-21	Y									Y							
TSK-KA-22									Y		Y	Y					
TSK-KA-23			Y			Y		Y			Y	Y	Y				
TSK-KA-24												Y					
TSK-KA-25														Y			
TSK-KA-26														Y			
TSK-KA-27														Y			
TSK-KA-28															Y		
TSK-KA-29															Y		
TSK-KA-30															Y		
TSK-KA-31												Y			Y		
TSK-KA-32																	Y
TSK-KA-33																	Y
TSK-KA-34																	Y
TSK-KA-35																	Y
TSK-KA-36																	Y
FPPR s. 35,36	Y																
s. 47-51, 52(2), 53							Y		Y								
s. 59-61										Y							
s. 64, 65											Y						
s. 66, 67												Y,N					

In addition to the above table, **Appendix SDA** provides an evaluation tool for the Delegated Decision Maker in determining how the strategies and/or results in the FSP are

- consistent with the objectives set by government; and
- measurable or verifiable.

SD3 ADDITIONAL INFORMATION

SD3.1 Additional FSP Information

SD3.1.1 Areas under Cutting Authority (TSL, CP, FSR, RP)

The FSP maps show blocks that are currently under Timber Sales Licence (TSL) and Forest Service Roads (FSR) that are under the control of BC Timber Sales. In addition, cutblocks that are currently under Cutting Permit (CP) or Road Permit (RP) and are held by others, are shown on the FSP maps.

SD3.1.2 Stocking Standards

The Stocking Standards in this FSP are based on established standards that have undergone extensive review, including the consideration of economically and ecologically viable species and the forest health risks associated with those species.

All the licensees in the Kalum Forest District worked together and created one set of stocking standards that was approved for each licensee's forest development plan. This set of stocking standards was approved by the District Manager on March 11, 2003, and forms the basis of the stocking standards to be used under this FSP.

The Stocking Standards in this FSP depart from these previously established stocking standards in two ways:

1. The late free growing date has been set at 20 years. This is in accordance with the FPPR section 44, which makes allowance for this time frame. Under the current silviculture treatment regime, there has often been a need to extend the late free-growing date for reforested areas. By extending the late free-growing date, there will be a reduction in unnecessary paperwork and an increase in operational flexibility for the licence. With the current level of information respecting the state of silviculture in the area, it is not expected that current forest management practices will change. Since timber supply reviews are based on current management practices, a timber supply impact from this change in free growing date is not expected.
2. Application of reduced stocking and lower inter-tree spacing to Moose Winter Range. The same reasons apply as for the Grizzly Bear: increased forage potential while still maintaining a commercially viable forest stand. While both species have different habitat connectivity requirements, the forage needs of moose are similar to that of grizzly bear (*personal communication, B. Pollard, RPBio – Jan 14 2004*), allowing the same stocking standards to apply to both species.

Forest ecosystems are often not uniform but can vary over small distances, and this is the basis for the inclusion of the ability to have complexes of stocking standards. Currently, the BCTS record-keeping system does not allow the reporting of these complexes, so the dominant site series stocking standard will be reported; however, information on the complexes will be available in BCTS site plans.

SD3.1.3 Invasive Plants

The FSP must address invasive plants (FPPR s. 17), and the basis for the following measures for control of the invasive plant species identified in the *Invasive Plants Regulation* is a report on the subject prepared by Acer Resource Consulting Ltd. (*B. Pollard, RPBio, January 2005*) – see **Appendix SDD**. While several options are presented in the report, only the ones considered practical and effective are used.

Use certified seed only in erosion control and grass-seeding activities. Uncertified seed can contain weed plant seeds. Avoid planting invasive species by using only seed which has been certified as weed-free. Perennial native grasses and legumes should be used for re-vegetation purposes. As a minimum, the seed grade used should be Canada Common #1 Forage Mixture.

In the course of their duties, BCTS field team personnel will make note of occurrences of invasive plants, and will report these occurrences to the Terrace Planning Forester within ten (10) working days of noting the occurrence. The Terrace Planning Forester will then collate and pass this information to a representative of the North West Invasive Plant Council within ten (10) working days of receiving a report from a BCTS field team member. This measure will allow the timely identification and reporting of the occurrence of invasive plants on lands directly affected by BCTS activities. The North West Invasive Plant Council is the body that coordinates actions in response to reported occurrences.

SD3.1.4 Natural Range Barriers

Where applicable (FRPA s. 48), the FSP must specify measures to mitigate the effect of removing or rendering ineffective natural range barriers (FPPR s. 18).

For the purposes of this FSP, the definition of Natural Range Barrier is in relation to the movement of livestock. There are no agricultural range activities of note within the FSP area. None of the activities under this FSP are expected to remove or render ineffective a natural range barrier, and therefore, there are no measures specified.

SD3.1.5 Cumulative Effect of Multiple FSPs

Timber Baron Forest Products Ltd.

There is some overlap between this Forest Stewardship Plan and the FSP for FLA16884, held by Timber Baron Forest Products Ltd. The overlap occurs on the northern portion of the Nass FDU (Meziadin-Kwinageese, Harper-Bonney sub-units) from this FSP with the Bear, Hanna, Kwinageese, and Madely FDUs from the Timber Baron FSP.

The strategies and results from both of these FSPs have been compared, and activities under the Timber Baron FSP and this FSP will be consistent. A point of clarification between the plans is worthwhile with respect to the BCTS result **TSK-KA-31** for cultural use of Cedar and Cypress: There is very little cedar and no cypress within the Timber Baron FSP area, and there is therefore no inconsistency between the plans.

Timber Baron was consulted during the public review of this FSP specifically to request that they give consideration to any possible conflicts between this FSP and their FSP. No comments were received.

Kalum Ventures Ltd.

Overlap exists on the Kitsumkalum, Big Cedar, and Deep-Eneek sub-units of the Terrace FDU with the approved FSP for Kalum Ventures Ltd. (Non-Renewable Forest Licence A73726 and Forestry Licence To Cut A77424). The strategies and results from both of these FSPs have been compared, and activities under both FSPs will not create any inconsistencies between the FSPs or in the strategies or results in each FSP. Points of clarification between the plans are worthwhile with respect to

- the BCTS result **TSK-KA-24** for wildlife tree retention. Both the BCTS and the Kalum Ventures FSPs are consistent with the stand-level biodiversity objective (FPPR s. 9.1), and since the results are measured at the stand level, nothing in the different approaches result in an inconsistency between the FSPs.
- the BCTS result **TSK-KA-31** for cultural use of Cedar and Cypress. This result is measured at the stand level. There is no equivalent result or strategy in the Kalum Ventures FSP, and the retention of Cedar on BCTS cutting authorities will not create any inconsistencies with the Kalum Ventures FSP.

Kitselas Forest Products Ltd.

Overlap exists on the Fiddler, Limonite-Kitnayakwa, Thunderbird-Williams, and Dasque sub-units of the Terrace FDU, and the Kitimat Valley FDU, with the proposed FSP for Kitselas Forest Products Ltd. ((Non-Renewable Forest Licence A73377 and Forestry Licence To Cut A77426). The strategies and results from both of these FSPs have been compared, and activities under both FSPs will not create any inconsistencies between the FSPs or in the strategies or results in each FSP. Points of clarification between the plans are worthwhile with respect to

- the BCTS result **TSK-KA-24** for wildlife tree retention. Both the BCTS and the Kitselas Forest Products FSPs are consistent with the stand-level biodiversity objective (FPPR s. 9.1), and since the results are measured at the stand level, nothing in the different approaches result in an inconsistency between the FSPs.
- the BCTS result **TSK-KA-31** for cultural use of Cedar and Cypress. This result is measured at the stand level. There is no equivalent result or strategy in the Kitselas Forest Products FSP, and the retention of Cedar on BCTS cutting authorities will not create any inconsistencies with the Kitselas Forest Products FSP.

The strategies and results from all of the above FSPs have been compared, and activities under the FSPs are not inconsistent with each other. The FSPs also share similar approaches to landscape level issues, including proportionality for old growth and seral stage analyses, so are consistent with each other in this respect as well.

Forest Development Plans

There are currently four approved Forest Development Plans (FDPs) on areas within the BCTS FDUs: Coast Tsimshian Resources Ltd. – TFL 1 and FL A16835 (former New Skeena Forest Products Inc. tenures); Skeena Sawmills - TFL 41; and Bell Pole Company FL A16836. Where the information has been readily available, approved blocks from these tenure holders are shown on the FSP maps.

SD3.1.6 Advertisement, Referrals, Reviews, and Comments

This Forest Stewardship Plan is made available to interested parties and to the general public for review and comment. The general public is made aware that the FSP is available for review through advertisements that are placed in local newspapers. The FSP is also provided to government agencies, and extra copies of FSP information are provided to the Ministry of Forests (MoF) to pass on to those First Nations groups affected by the plan. The MoF reviews the plan as well as any documented comments received from other government agencies, the general public and First Nations groups. Following the public review period, any written comments that are received by BC Timber Sales and how they have been addressed will be forwarded to the District Manager of the Kalum Forest District for consideration when making a decision regarding approval of the FSP.

Specific details are provided in Section SD5 of this document.

SD3.1.6.1 Advertisements

Copies of local newspaper insertions advertising the 60-day review period are included in Section SD5 when the FSP is submitted to the Delegated Decision Maker for approval.

SD3.1.6.2 Review and Comment / Documentation and Referral

Any comments received during the 60 day review period are reviewed by BC Timber Sales. The comments and BCTS' decisions relating to those comments are included in Section SD5 when the FSP is submitted to the Delegated Decision Maker for approval.

SD3.1.6.3 Public

Any written comments that are received from the general public are provided in Section SD5 when the FSP is submitted to the Delegated Decision Maker for approval.

SD3.1.6.4 First Nations

BC Timber Sales has met and corresponded with First Nation groups regarding this plan. Summaries of meetings, comments, and responses are provided in Section SD5 when the FSP is submitted to the Delegated Decision Maker for approval.

SD3.1.6.5 Agencies

Information related to meetings, correspondence, and discussions between the various governmental agencies and BC Timber Sales are provided in Section SD5 when the FSP is submitted to the Delegated Decision Maker for approval.

SD3.1.6.6 Summary of Revisions

A summary of the revisions that have been made to the FSP is included in Section SD5 when the FSP is submitted to the Delegated Decision Maker for approval.

SD3.1.7 FSP Maps

The FSP maps have been reviewed and discussed with staff of the Ministry of Forests.

The boundaries of the Forest Development Units (FDUs) were chosen primarily to match internal administrative boundaries; other factors that influenced the shape and number of FDUs include watershed boundaries, trapline boundaries, and First Nation asserted traditional territories.

The sub-units of the FDUs as described above are shown on the maps and are referenced within the FSP to assist in defining where certain strategies or results apply. The sub-units do not have any legal standing under this FSP or under the FRPA.

SD3.2 Items not addressed in FRPA

SD3.2.1 Trapline holders

While the FRPA legislation is silent on the need to involve trapline holders, BCTS believes that this stakeholder group deserves attention. As a result, the FSP submission cover letter will be provided to them. While the FSP will not provide site-specific information, if a relationship is established early in the planning process, the trapline holder can provide input and information that will help limit conflicts at the stand level.

SD3.2.2 Botanical Forest Products

While the FRPA legislation is silent on the need to address botanical forest products, it is expected that this may be identified as a resource feature in the future. Therefore, it is worthwhile mentioning that the botanical forest products in the BCTS FDUs are currently restricted to mushroom picking and sustenance harvest of medicinal plants.

SD3.2.2.1 Medicinal Plants

Through the review of traditional use information for First Nation groups, there has been some

limited information identifying possible areas that were used for gathering medicinal plants. Unfortunately, the area information is quite general, and the species of plants gathered at these sites is not clear. Generally, the maintenance of representative mature and immature timber types over the landscape should ensure that medicinal plants are available for gathering.

SD3.2.2.2 Mushrooms

Mushroom picking is a highly variable and unregulated activity that can be very lucrative when the mushroom harvest is good and the prices for mushrooms are high. While there are several mushroom species that qualify as botanical forest products on the FSP area, **pine mushroom** (*Tricholoma magnivelare*) is the most popular. Pine mushroom harvesting provides income to both local and transient mushroom pickers and buyers. The forest and pine mushroom industries can be in conflict since timber harvesting may remove pine mushroom host trees, reducing picking opportunities. Alternatively, timber development increases the area accessible by road, which increases the area accessible to the average mushroom picker. Regulation of pine mushroom activities to allow better monitoring of the industry has been discussed intermittently.

Recent research suggests that most pine mushrooms grow in soils with a poor nutrient and submesic moisture regime. Although these sites are not the most productive for timber production, merchantable timber is produced on these sites. However, this information is still somewhat uncertain as ground-truthing is difficult - many people are unwilling to share information regarding where they have found mushrooms. This has made managing forests to maintain options for mushroom picking difficult. Nonetheless, BCTS has taken some initiative in addressing this potentially valuable resource

The Harper area, adjacent to and up slope from the Nass River has very high pine mushroom values, particularly in the benching areas close to the Nass River. This area has a high degree of potential conflict between the timber industry and the mushroom industry. There are two main issues: firstly, some pine mushroom habitat is being harvested, and secondly, timber development introduces road access to areas previously considered to be "remote" picking areas. The West Nass operating area offers significant short and long-term timber harvesting opportunities for BC Timber Sales. It has also been referred to as providing world class pine mushroom picking opportunities. BCTS has chosen to reduce the rate of harvest in these areas and to design blocks to conserve pine mushroom habitat while developing timber throughout the district in an economically and environmentally acceptable manner.

Pine mushroom habitat in the Harper area will be conserved both within and/or adjacent to cut blocks. Within blocks, habitat will be conserved by applying a variety of silviculture systems such as clear cut with reserves, uniform/group/strip/irregular shelterwood, and patch cutting. Pine mushroom habitat is being managed outside of cut blocks by locating block boundaries so pine mushroom habitat remains between blocks. Where appropriate, the research that suggests submesic sites provide the best habitat will be used to assist us in designing blocks to conserve pine mushroom habitat.

A report "*Pine Mushroom Habitat in the West Nass/Harper Lake area of Northwest British Columbia: Spatial Extent and Overlap with Timber Interests*", produced as part of a Gitanyow Treaty Related Measure, compared the total area logged and proposed to be logged with pine mushroom habitat (submesic sites). This analysis shows the impact of timber development in the area to be only approximately ten percent of the mushroom ground (submesic sites).

A recurring suggestion from mushroom pickers or the general public is to consider designating pine mushroom habitat areas as old growth management areas providing long term protection for these areas. This strategy of preserving mushroom ground may be short sighted, since mushroom production peaks in thrifty stands of timber approximately 50 to 200 years old. The best strategy for the resource includes timber harvesting practices that maintains a constant amount of forests in the maximum mushroom producing age group. For example, harvesting 10 percent of the mushroom ground every 20 years will ensure there is a continuous supply of thrifty forests. Strategy and result **TSK-KA-15** aids in achieving this goal.

The specific location of where botanical forest products are harvested is generally not shared between mushroom pickers and forest planners. It is critical that interested persons provide input during the FSP public review and comment period to mitigate any impacts timber development may have on all forest resources, including pine mushroom habitat.

SD4 Sources of Information

Information is current to October 2005

Information Source	Publisher	Date of publication
The *Forest and Range Practices Act* and associated regulations The *Forest Practices Code of British Columbia Act* and associated regulations and guidebooks The *Wildfire Act* The *Heritage Conservation Act* The *Forest Act* The *Foresters Act* The *Fisheries Act of Canada* http://www.for.gov.bc.ca/tasb/legsregs/comptoc.htm	Government of BC Government of Canada	Website version current to October 7, 2005
The *Species At Risk Act* http://laws.justice.gc.ca/en/S-15.3/index.html	Government of BC	Website version current to October 7, 2005
FRPA Training Companion Guide	Government of BC	February 2004
What's New in FRPA (2005)	Government of BC	February 2005
Kalum Land and Resource Management Plan, BC Ministry of Sustainable Resource Management http://srmwww.gov.bc.ca/ske/lrmp/kalum/index.htm	Government of BC	May 2002
Fiddler Creek Total Resource Plan, Kalum Forest District	Kalum Forest District, BC Ministry of Forests (MoF)	December 1995
A Protected Areas Strategy for British Columbia: The Prince Rupert Region PAS Report http://wlapwww.gov.bc.ca/ske/pas/	Ministry of Environment (MOE)	1996, 1998
Management Direction Statement for Swan Lake Kispiox River Provincial Park Extension – BC Parks http://wlapwww.gov.bc.ca/bcparks/planning/mgmtplns/swan_kis/swan_mds.pdf	BC Parks – MOE	March 2003
Swan Lake Wilderness Area – Wilderness Management Plan; Kalum and Kispiox Forest Districts	MoF	Jan 1996
Kalum Forest District Stocking Standards http://www.for.gov.bc.ca/ftp/dkm/external/!publish/Kalum%20Stocking%20Standards/	Kalum Forest District, MoF	March 11, 2003
Dothistroma Strategy Management Plan - Skeena Business Area, R. Chan et al	BC Timber Sales (BCTS)	Undated *(post 2003)*
Kalum Forest Health Strategy, 2003-2005; prepared by R Brouwer, for the Kalum DFAM group; March 2004	TimberSong Consulting	March 26, 2004
Type 2 Strategic Silviculture Analysis – Analysis Report ; prepared by *forest ecosystems solutions ltd.*, for the Kalum Forest District	BC Ministry of Forests, Prince Rupert Forest Region	November 2001
Minister's order respecting identified ungulate range and species at risk http://wlapwww.gov.bc.ca/wld/identified/approved_order.html	MWLAP (now MOE)	May 6, 2004

Information Source	Publisher	Date of publication
Notice – Indicators of the Amount, Distribution, and Attributes of Wildlife Habitat Required for the Winter Survival of Ungulate Species in the Nass TSA. *ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Ungulate_Winter_Range/Timber_Supply_Areas/Nass_TSA/Notice/*	MWLAP (now MOE)	Website versions current to Jan 11, 2005
Notice – Indicators of the Amount, Distribution, and Attributes of Wildlife Habitat Required for the Winter Survival of Ungulate Species in TFL 1 *ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Ungulate_Winter_Range/Tree_Farm_Licenses/TFL_1/Notice/TFL_1_UWR.pdf*	MWLAP (now MOE)	Website versions current to Jan 11, 2005
Notice – Indicators of the Amount, Distribution, and Attributes of Wildlife Habitat Required for the Winter Survival of Ungulate Species in TFL 41 *ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Ungulate_Winter_Range/Tree_Farm_Licenses/TFL_41/Notice/*	MWLAP (now MOE)	Website versions current to Jan 11, 2005
Notice – Indicators of the Amount, Distribution, and Attributes of Wildlife Habitat Required for the Winter Survival of Ungulate Species in the Kalum TSA. *ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Ungulate_Winter_Range/Timber_Supply_Areas/Kalum_TSA/Notice/Kalum%20TSA_UWR.pdf*	MWLAP (now MOE)	Website versions current to Jan 11, 2005
Notice – Indicators of the Amount, Distribution, and Attributes of Wildlife Habitat Required for the Winter Survival of Species At Risk in the Kalum Forest District *ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Species_at_Risk/Kalum_FD/Notice/Kalum%20FD_SAR.pdf*	MWLAP (now MOE)	Website versions current to Jan 11, 2005
Draft General Wildlife Measure (GWM) for Mountain Goat Ungulate Winter Range in the Kalum TSA and TFLs 1 and 41, and associated updated maps to Mountain Goat Ungulate Winter Range	MOE	Document: April 2005, Updated Maps: received October, 2005
Identified Wildlife Management Strategy 2004 – Including accounts and measures for Grizzly Bear, Great Blue Heron, Coastal Tailed Frog, Wolverine, and Marbled Murrelet *http://wlapwww.gov.bc.ca/wld/identified/iwms2004.html*	BC Ministry of Sustainable Resource Management (MSRM)	Website versions current to Jan 7, 2005
Inventory of approved and proposed Wildlife Habitat Areas, as identified on MOE websites: *http://wlapwww.gov.bc.ca/wld/identified/wha/approved/wha_approved.htm* *http://wlapwww.gov.bc.ca/wld/identified/wha/proposed/wha_proposed.html*	MOE	Website versions current to Jan 7, 2005
Inventory of known Ungulate Winter Ranges, as identified on MOE website (updated to Dec 23, 2004): *http://wlapwww.gov.bc.ca/wld/uwr/ungulate_app.html*	MOE	Website versions current to Jan 7, 2005
Red and Blue listed animal species, plant species, and ecological communities, in the Kalum Forest District; B.C. Conservation Data Centre. 2005. BC Species and Ecosystems Explorer. B.C. Ministry. of Environment. Victoria, BC. *http://srmapps.gov.bc.ca/apps/eswp/*	MOE	Website version accessed as of October 27, 2005
Conservation Data Center: Plant communities in the Kalum Forest District (spread sheet format), as of November 2004; *http://srmwww.gov.bc.ca/atrisk/documents/NPC_ForestDistrictLists_Nov2004.xls* CDC update list for 2004/2005 *http://srmwww.gov.bc.ca/atrisk/documents/NPC_Changes_Nov2004.xls* *http://srmwww.gov.bc.ca/atrisk/documents/EC_Changes_Nov2004.xls* *http://srmwww.gov.bc.ca/atrisk/documents/2005animal_changes.pdf* *http://srmwww.gov.bc.ca/atrisk/documents/2005plant_changes.pdf*	MSRM	Website last visited Sep 26, 2005

Information Source	Publisher	Date of publication
Kalum Forest District BEC map (Nass TSA) http://www.for.gov.bc.ca/hre/becweb/papermap/Field/DKM_Kalum_Field_North.pdf	MoF	Oct 29, 2003
Kalum Forest District BEC map (Kalum TSA) *http://www.for.gov.bc.ca/hre/becweb/papermap/Field/DKM_Kalum_Field_South.pdf*	MoF	Oct 29, 2003
A Field Guide to Site Identification and Interpretation for the Prince Rupert Forest Region (Land Management Handbook 26) *http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh26.htm*	MoF	1993
Pelagics & Minor Finfish - Pacific Region: Eulachon – Biology *http://www.pac.dfo-mpo.gc.ca/ops/fm/herring/eulachon/default_e.htm*	Fisheries and Oceans Canada	Website visited Feb 22, 2005
Freshwater Fishing Regulations Synopsis 2004-2005 (Region 6) http://wlapwww.gov.bc.ca/fw/fish/pdf/region_6.pdf	MOE	Website version current to Jan 2005
Guide Outfitters in British Columbia 2004-2005 (updated April 2005); Fish and Wildlife Recreation and Allocation Branch *http://wlapwww.gov.bc.ca/fw/wild/documents/guide_outfitters.pdf*	WLAP	April 2005
Coastal Watershed Procedure – Deep Creek and Spring Creek Community Watershed	Brian Roberts, M.Sc., P.Ag., G.I.T.	March 5, 2003
Addendum to the March 5, 2003 report: Coastal Watershed Procedure – Deep Creek and Spring Creek Community Watersheds	Brian Roberts, M.Sc., P.Ag., G.I.T.	Jan 19, 2004
Community Watershed Query database (Website last updated March 12 2001) *http://srmwww.gov.bc.ca/wat/cws/query/cws.htm*	MSRM	Website versions current to Jan 2005
Water Quality Objectives *http://wlapwww.gov.bc.ca/wat/wq/wq_objectives.html*	MOE	Website versions current to Jan 14, 2005
Standards and Best Practices for Instream Works *http://wlapwww.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf*	MOE	March 2004
A User's Guide to Working in and Around Water; Water Management Branch *http://wlapwww.gov.bc.ca/ske/wateract/userguide.pdf*	BC Environment (MOE)	Jan 2001
Order to Establish Objectives for a Recreation Site, Recreation Trail, or Interpretive Forest Site – Signed and dated orders are located in Kalum Forest District File 16660-04	Kalum Forest District, MoF	Nov 8, 1996; July 25, 1997; July 2, 1998; Mar 26, 1999; Aug 11, 1999
Archaeological Overview Assessment for the Kalum TSA – prepared for the Kalum Forest District (MoF)	Millennia Research	1994
Archaeological Overview Assessment for TFL 1 – prepared for Skeena Cellulose Inc.	I.R. Wilson Archaeological Consultants	1995
Forestry/Range Interim Measures Agreements: Kitselas, Kitsumkalum, Lax Kw'alaams, Metlakatla, Gitga'at, Haisla *http://www.for.gov.bc.ca/haa/FN_Agreements.htm*	MoF – Aboriginal Affairs Branch	Jan 2004
Guidelines for Managing Cedar for Cultural Purposes *http://www.for.gov.bc.ca/ftp/DSI/external/!publish/Stewardship/SIFD_Objectives_Matrix/7_Cultural_Heritage/Guidelines/Cedar_Guidelines_MOF_Consultation_Final_Jan_2005.pdf*	MoF – Coastal Forest Region	Jan 2005

Information Source	Publisher	Date of publication
Unpublished comments on Draft Schedule B to the Ecosystem-Based Management Handbook	MoF	June 20, 2005
Scenic Area designation and Establishment of VQOs – District Manager letters	Kalum Forest District, MoF	Jan. 7, 1997 Sept. 8, 1998
Forest Development Plans – BC Timber Sales	BCTS	Various
Forest Development Plan for TFL 41 – Skeena Sawmills (West Fraser Mills)	Skeena Sawmills	Various
Forest Development Plans – Skeena Cellulose Inc.	SCI	Various
Options for Invasive Plant control	Acer Resource Consultants	January 14, 2005
Environment Canada website for smoke control forecasts *http://www.weatheroffice.pyr.ec.gc.ca/wxhealth/smoke/*	Environment Canada	Website versions current to Jan 14, 2005
BC Ministry of Sustainable Resource Management (now Agriculture and Lands) Internet mapping site *http://maps.gov.bc.ca/*	MSRM	Website versions current to Jan 14, 2005
Kalum Forest District Operational Trial and Study Synthesis – prepared for the Forest Renewal BC and the Kalum Forest District	Kingfisher Forest Sciences	March 2002
Pine Mushroom Habitat in the West Nass/Harper Lake area of Northwest British Columbia: Spatial Extent and Overlap with Timber Interests	Kalum Forest District, MoF	Unknown
Personal communication: M. Folkema, *Planning Officer*, BC Timber Sales (Skeena Business Unit)	n/a	Various dates Sept 2004 – November 2005
Personal communication: A. Hetherington, *Ecosystem Specialist*, BC Ministry of Environment	n/a	Email communications Jan 10,12, 14, Sept 26, 2005
Personal communication: L. Reese-Hansen, *Ecosystem Biologist*, BC Ministry of Environment, Terrace Field Office	n/a	May 9, 2005 Sep 28, 2005
Personal communication: Brad Pollard, RPBio; *Principal*, Acer Resource Consulting	n/a	Jan 14, 18, April 20, Oct 27, 2005
Personal communication: K. Kilpatrick, *Stewardship Forester*, BC Ministry of Forests, Kalum Forest District	n/a	Jan 2005
Personal communication: B. LaHaie, *Stewardship Forester*, BC Ministry of Forests, Kalum Forest District	n/a	April 22, November 3, 2005
Personal communication: B. Banovic, *Operations Manager*, Timber Baron Forest Products Ltd.	n/a	November 10, 2005

SD5 Public, Agency, and First Nation Review and Comment Summary

The Forest Stewardship Plan is made available to interested parties and to the general public for review and comment. The general public will be made aware that the FSP is available for review through advertisements that are placed in local newspapers. The FSP is also provided to government agencies, with extra copies of FSP information provided to the Ministry of Forests (MoF) to pass on to those First Nations groups affected by the plan. BC Timber Sales will also meet with First Nations' groups to discuss the plan.

Written comments that are received by BCTS during the public review, and how they have been addressed, will be provided as part of this document when it is submitted to the Ministry of Forests for approval. This will include summaries of First Nations' meetings and their outcomes.

SD5.1 Advertisements

Newspaper insertions advertising the 60-day review period appeared in local newspapers: on March 23 and 30, 2005 in the *Terrace Standard*; on March 23 and 30, 2005 in the *Northwest Weekly*; and on March 23 and 30, 2005 in the *Northern Sentinel*. Copies of these advertisements are provided behind Tab 1 of this document.

SD5.2 Review and Comment / Documentation and Referral

SD5.2.1 Public Review Letters

Copies of letters or emails sent to non-First Nation or non-Agency stakeholders, and any subsequent correspondence are provided behind Tab 2 of this document.

SD5.2.1.1 General Public

A letter was received from a representative of the Lakelse Watershed Committee. An email response was provided that discussed each of the concerns, and noted several changes recommended for the FSP:

- Update the Ungulate Winter Range strategies; *[Done]*
- Clarify that strategy 2005-21 (now renumbered as **TSK-KA-15**) applies directly to Grizzly Bears; *[Done]*
- If WHAs for Grizzly Bears are established before the FSP is finalised, add them in; *[Not done, no WHAs in place at time of submission]*
- Add the initiatives that are taking place in the Williams Creek watershed (sediment source mapping and channel assessment) to the Supporting Document. Review the results of these initiatives (if they are available before submission of the FSP) for possible additions or changes to strategies or results; *[First part done; second part not yet done as results not available as of October 2005]*
- Reference the BCTS Environmental Management System (or at least the Emergency Response Manual) in the Supporting Document *[Done]*

SD5.2.1.2 Recreation groups

SD5.2.1.2.1 Commercial Recreation

Commercial recreation groups in the area are expected to provide comment through the public review of the plan. No comments were received.

SD5.2.1.2.2 Non-commercial Recreation

Individual recreationists are expected to provide comment through the public review of the plan. No comments were received.

SD5.2.1.3 Trapline Holders, Guide-Outfitters

In early April, letters were sent to trapline holders and guide-outfitters whose areas overlap the FDUs within the FSP area, informing them that the FSP was available for review and comment. Of 277 letters sent to trappers, 100 letters were returned. One of the nine letters sent to guide-outfitters was returned. No comments specific to trapping or guide-outfitter activities were received.

SD5.2.1.4 Other Forest Tenure Holders

Letters were sent to six forest licensees whose normal operating areas overlap with the FDUs. No comments were received. A short discussion did occur with a representative of Timber Baron Forest Products, but no issues were raised.

SD5.2.2 First Nations

Correspondence, meeting notes, and file notes of discussions between BCTS and First Nation groups are provided behind Tab 3 of this document.

SD5.2.2.1 Gitanyow First Nation

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A meeting occurred on October 19, 2005. Gitanyow indicated that they are primarily interested in joint strategic planning on their territory, and would share cultural information based on an understanding that joint planning would go ahead. Gitanyow also raised a concern about the cost of producing traditional use information. A strategic planning process has been committed to by the Kalum Forest District in the Gitanyow traditional territory, and BCTS will be participating in this process – result **TSK-KA-28** acknowledges this process.

SD5.2.2.2 Gitxsan First Nation

A letter was sent (dated April 6, 2005) to the Gitxsan Treaty Office (GTO) providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A letter from the GTO indicated that the FSP was distributed to the appropriate Gitxsan House Chiefs, but no comments were received from them. A follow-up telephone conversation with GTO indicated that they no longer had the capacity to respond to referrals. BCTS therefore chose to deal directly with the house chiefs, and letters were sent to them (dated September 1 or 2, 2005).

An email submission was provided by a person purporting to represent a house chief, but it did not have any issues that could be dealt with through the FSP.

Four chiefs responded with information requests. Of these, two requested meetings that took place on September 19 and 22, 2005. Information received at these meetings identified concerns with how house territories have been mapped, a story of cultural significance respecting Mount Roche deBoule, and the need for ongoing communications (as reflected in strategy **TSK-KA-28**).

SD5.2.2.3 Haisla First Nation

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A response letter (dated June 9, 2005) was received from the Haisla. A meeting subsequently occurred on July 5, 2005. Haisla indicated that the level of information requested on the very large FDUs was too much, and their desire that consultation occur at a more operational level. The meeting allowed a focusing of the area of interest to forested lands within the FDUs. Haisla also allowed BCTS access to their on-line cultural data base, and a possible strategy was forwarded for incorporation to the Haisla making use of this information; however, the Haisla requested that this draft strategy not be used due to concerns that cultural information might be abused by the public. Haisla input did contribute to the modification of strategy **TSK-KA-28** to allow the opportunity for additional cultural heritage resource input, and the addition of result **TSK-KA-31** to address the need for Cedar for cultural purposes.

SD5.2.2.4 Tsimshian First Nation

SD5.2.2.4.1 Hartley Bay Band (Gitga'at)

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A response letter (dated June 6, 2005) was received from the Gitga'at. A meeting subsequently occurred on July 23, 2005. Gitga'at indicated that the level of information that they were willing to share was general in nature only (no site-specific information). Partly as a result of the input from Gitga'at, strategy **TSK-KA-28** was modified to allow the opportunity for additional cultural heritage resource input, and result **TSK-KA-31** was added to address the Gitga'at need for Cedar for cultural purposes.

SD5.2.2.4.2 Kitselas Band

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A meeting occurred on August 25, 2005. The main input was with respect to the potential for forest activities to impact fish or fish habitat – there was significant discussion of the Lakelse River and Williams Creek watersheds. Kitselas indicated that they would have another look at the BCTS FSP.

Another meeting occurred on August 30, 2005, and Kitselas indicated that they had no additional comments on the FSP.

It should be noted that there is a FSP in progress for the tenure held by the Kitselas First Nation, and their FSP is similar in many respects to the BCTS FSP.

SD5.2.2.4.3 Kitsumkalum Band

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A meeting occurred on August 19, 2005 between Kitsumkalum and BCTS. The primary

item discussed was the overlap of FDUs between BCTS and tenure held by Kitsumkalum, specifically with respect to access to timber. A single concern with respect to the possibility of a rare salamander was also brought forth – this was followed up on, and determined that it was not an issue. No changes to the FSP resulted from this discussion.

It should be noted that there is a FSP in place for the tenure held by the Kitselas First Nation, and the BCTS FSP is similar in many respects to their FSP.

SD5.2.2.4.4 Lax Kw'alaams Band

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A meeting occurred on October 5, 2005 in Port Simpson. Lax Kw'alaams did not indicate that they would share traditional use information, but some cultural heritage issues raised were management of culturally modified trees, and of cedar for canoes and poles. Lax Kw'alaams indicated that they support the designation of old growth management areas. At the end of the meeting, Lax Kw'alaams representatives indicated that the FSP strategies and results for cultural heritage seemed fine, but that they wanted to think this over and get back to BCTS within a week. A telephone follow-up on November 16 confirmed that Lax Kw'alaams had not yet sent their comments, but that any comments that they will provide will not have a substantive effect on the FSP. Partly as a result of the input from Lax Kw'alaams, strategy **TSK-KA-28** was modified to allow the opportunity for additional cultural heritage resource input, and result **TSK-KA-31** was added to address their concern for Cedar for cultural purposes. Strategy **TSK-KA-29** and result **TSK-KA-30** provide a process to identify and deal with cultural features, which include culturally modified trees.

SD5.2.2.4.5 Metlakatla Band

A letter was sent (dated April 6, 2005) to the Band Council providing them with a copy of the public review version of the FSP, supporting document, and maps. Information was requested on the nature and location of any interests and traditional practices within the FDUs, and a meeting was requested to discuss the FSP.

A meeting occurred on September 9, 2005 in Prince Rupert. There was an opening statement that Metlakatla wished no permit approvals to occur within their territory in the Kalum Forest District as they have concerns with how their Forest and Range Agreement is being implemented. BCTS could not respond to this issue. Metlakatla indicated that they would not be sharing traditional use information, and they could not provide site specific information without specific sites to discuss. After further discussion, Metlakatla representatives did indicate a belief that the FSP process was better than the old process under the Forest Practices Code, but were still not prepared to provide information at this time. BCTS indicated that they are willing to meet with Metlakatla again as soon as the Band wishes. It was also noted that there is a strategy in the FSP that provides for regular meetings. Metlakatla asked that "regular" be defined, and BCTS agreed that this should mean at least annually. This is consistent with the wording in strategy **TSK-KA-28**.

SD5.2.3 Agencies

Information related to meetings, correspondence, and discussions between the various governmental agencies and BCTS is provided behind Tab 4 of this document.

SD5.2.3.1 Federal Department of Fisheries and Oceans

The FSP was made available to the Department of Fisheries and Oceans (DFO), along with an

offer to meet to discuss or review the FSP. A letter was received from the Terrace DFO office that provided insight into how DFO will be approaching management of riparian areas. For the most part, this letter does not relate directly to the FSP; however, there is one section in which DFO "advocates the retention of a windfirm riparian reserve adjacent to S4 streams and [to] S6 streams directly tributary to fish streams". BCTS has not elected to follow the DFO direction at this time, as the strategies and results in this FSP and the practice requirements of FRPA should also achieve this intent of the DFO statement, which is to protect fish habitat and stream bank stability.

SD5.2.3.2 BC Ministry of Water, Land and Air Protection/ BC Ministry of Environment

The FSP was made available to the Skeena Region of the MWLAP (now MoE). This Ministry also coordinates the Nisga'a Wildlife Committee. No comments were received from the MOE, or from the Nisga'a Wildlife Committee.

Individual MOE employees were consulted from time to time to ensure that the FSP was prepared with knowledge of upcoming initiatives, such as Wildlife Habitat Area designations.

SD5.2.3.3 BC Ministry of Forests

An information sharing meeting was held with Kalum Forest District staff on September 7, 2004. Since then, BCTS and MoF staff have maintained informal contact to ensure that information and understandings are current.

A review of the FSP by Kalum District staff was requested at the time the FSP went to public review, but the review did not occur. Some input and guidance was provided from District Staff with respect to First Nations information sharing.

Copies of the FSP are provided to the Kalum Forest District to allow the District to undertake the Crown's required First Nations' consultation process.

SD5.3 Summary of Revisions

A summary of any revisions that are made to the FSP is provided behind Tab 5 of this document.

APPENDIX SDA: EVALUATION TOOL

This evaluation tool is provided to assist the Delegated Decision Maker in determining consistency of the strategies and results in the FSP with the Objectives set by Government. The discussion of how to measure and/or verify a strategy or result is only provided to demonstrate that they are measurable or verifiable – it is not meant to constrain the Ministry of Forests in any way.

The structure of the tool is a table format that first describes an objective set by government, and then lists the strategies and/or results that are consistent with that objective. Where a reference number is **bolded**, the strategy or result was created specifically for that objective. Where a reference number is not bolded, it was created for another objective, but is noted as being consistent with the current objective as well.

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
Objective(s):	FPPR s. 5: "The objective set by government for soils is, without unduly reducing the supply of timber from British Columbia's forests, to conserve the productivity and the hydrologic function of soils. "		
TSK-KA-01	Result	Addresses an area of known soil sensitivity in an area that has been singled out in various public planning processes. (i.e. Kalum LRMP)	Road account can be reviewed. Can confirm that ECA calculations were done, and results can be reviewed after five years. Can confirm that road & channel assessment was done.
TSK-KA-02	Strategy	By taking an action on roads, which are a known conduit for the movement of erodible soils: regular inspections will allow the risk of erosion to be mitigated	Information can be requested to determine if inspections were scheduled, carried out, and any items identified were prioritized for action.
TSK-KA-02	Result	By taking an action on roads, which are a known conduit for the movement of erodible soils: regular inspections will allow the risk of erosion to be mitigated	Dated inspections are on file to prove that they were done.
TSK-KA-18	Strategy	Allows for the maintenance of water quality and limits the potential for sedimentation or disturbance to riparian areas.	See below
TSK-KA-18	Result	Allows for the maintenance of water quality and limits the potential for sedimentation or disturbance to riparian areas.	See below
TSK-KA-21	Result	Ensures that any harvesting in these Community Watershed results in no hydrological impact.	See below
FPPR s. 35,36	n/a	FPPR practice requirements elected	n/a
Objective(s):	FPPR s. 6: "The objectives set by government for timber are to (a) maintain or enhance an economically valuable supply of commercial timber from British Columbia's forests, and (b) ensure that delivered wood costs, generally, after taking into account the effect on them of the relevant provisions of this regulation and of the Act, are competitive in relation to equivalent costs in relation to regulated primary forest activities in other jurisdictions, and (c) ensure that the provisions of this regulation and of the Act that pertain to primary forest activities do not unduly constrain the ability of a holder of an agreement under the *Forest Act* to exercise the holder's rights under the agreement."		
TSK-KA-03	Result	Stocking standards as identified are a way of ensuring that new forests will be viable from a commercial perspective, and this will ensure that costs of operating in future forests can be written off against known species of value.	Review of RESULTS and Annual declarations.
TSK-KA-04	Strategy	Strategy ties to the Timber objective by addressing costs – clarifies the intent of "no logging" in the LRMP: i.e. it does not say "no road construction"	Rationale is provided with the Timber Sale Licence, Cutting Permit or Road application
TSK-KA-05	Result	Result recognises the guidance from the LRMP while clarifying that the Kowesas area is not excluded from the harvesting land base.	Timing of harvesting operations in context with the completion of a landscape level plan

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
Objective(s):	FPPR s. 7(1): "The objective set by government for wildlife is, without unduly reducing the supply of timber from British Columbia's forests, to conserve sufficient wildlife habitat in terms of amount of area, distribution of areas and attributes of those areas, for (a) the survival of species at risk; (b) the survival of regionally important wildlife; and (c) the winter survival of specified ungulate species." Sections 9, 10, 11, 12, and 13 of the *Government Actions Regulation* (GAR) allows • the establishment of, and general wildlife measures for, "species at risk", "regionally important species", and "specified ungulate species". • designation of, and objectives for, ungulate winter range (UWR) • designation of "species at risk" *(coastal tailed frog, grizzly bear, and marbled murrelet)*, "regionally important species" *(n/a)*, and "specified ungulate species" *(Mountain Goat and Moose)*. As of January 2005, notices providing descriptions of habitat area, distribution, and attributes have been released by the Minister of WLAP for *coastal tailed frog, grizzly bear, and marbled murrelet; Mountain Goat and Moose*		
TSK-KA-06	Result	Recognises guidance from the Kalum LRMP with regard to the Ascaphus Creek for Coastal Tailed Frog. Timber supply impact is accepted as this area will be included as one of the Wildlife Habitat Areas for Tailed Frog and therefore is in the 1% budget for the District.	No harvesting within the area defined.
TSK-KA-07	Result	Forage is an essential requirement for the survival of a species, and the revised stocking creates or maintains forage habitat.	Review of RESULTS and Annual declarations. Stocking standards are utilised to determine the silviculture plan for an area – this would be referenced in Site Plans
TSK-KA-08	Result	Seral stage distribution has been identified through the LRMP as being of benefit to Grizzly Bear, and this area was singled out as of particular importance.	Seral stage analysis.
TSK-KA-09	Result	Allows for conservation of movement habitat in a low-level pass, which will provide for species survival.	Corridor in place within two years of approval of FSP; No commercial harvest from within identified corridor (unless for salvage)
TSK-KA-10	Result	Allows for conservation of movement habitat in a low-level pass, which will provide for species survival	Corridor in place within two years of approval of FSP; No commercial harvest from within identified corridor (unless for salvage)
TSK-KA-11	Result	Allows for conservation of movement habitat in a low-level pass, which will provide for species survival	100% of the forested area located in polygon "A" is retained. Within polygon "B", timber harvesting is limited to partial cutting systems (i.e. seed tree; shelterwood; single-tree or group selection; retention).
TSK-KA-12	Strategy	This exemption provision ensures that the management of Goat UWR is occurring "without unduly reducing the supply of timber from British Columbia's forests".	If development occurs outside of the June-October window, a RPBio report would be on file that describes actions/ timing
TSK-KA-12	Result	Habitat amount, distribution, and attributes are as per the spatially defined Goat UWR identified on the maps with the Section 7 notice. Activities are in agreement with the Draft General Wildlife Measures for Goat UWR, and in general agreement with the Kalum LRMP.	C&E inspections will identify when operations are occurring, which can then be correlated to the Goat UWR timing window. Where development occurs outside of the June-October window, an RPBio report would be on file that describes actions/ timing.
TSK-KA-13	Result	Addresses the need to evaluate Goat UWR in the Nass FDU to ensure that there is not a loss of potential UWR that is identified by MOE.	In the Nass FDU, Site Plan (or road file) includes reference to the RPBio report that reviews the value of candidate Goat UWR and specifies what actions are to be taken.

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
TSK-KA-14	Strategy	Habitat amount, distribution, and attributes are as per the spatially defined Moose UWR identified on the maps with the Section 7 notice. Timing activities are in general agreement with the Kalum LRMP.	Where development occurs outside of the May-November window, an RPBio report would be on file that describes actions/ timing.
TSK-KA-14	Result	Habitat amount, distribution, and attributes are as per the spatially defined Moose UWR identified on the maps with the Section 7 notice. Timing activities are in general agreement with the Kalum LRMP.	C&E Inspections will identify when operations are occurring, which can then be correlated to Moose UWR timing window. Where development occurs outside of the May-November window, an RPBio report would be on file that describes actions/ timing.
TSK-KA-15	Strategy	Allows the establishment of a range of patch sizes - this is shown to be of benefit to Marbled Murrelet and Grizzly Bear (as per IWMS habitat characteristics)	Within two months of the completion of the seral/ patch analysis currently under way by Ardea Consulting, a summary of the allowable patch size distribution (spatial & temporal) for the portions of the LUs within the Kitselas FDU will be available.
TSK-KA-15	Result	Allows the establishment of a range of patch sizes - this is shown to be of benefit to Marbled Murrelet and Grizzly Bear (as per IWMS habitat characteristics)	The same methodology for LU Seral/ Patch distribution is to be used to evaluate movement towards patch size distribution on a periodic basis (5 years). If C&E believes that the result is not being achieved, they can conduct an analysis based on the information provided by the licensee in its last annual reporting.
TSK-KA-16	Strategy	Provides for activities to be focused on true UWR by allowing non-UWR areas to be treated as such. This exemption provision ensures that the Goat UWR is occurring "without unduly reducing the supply of timber from British Columbia's forests". Ultimately, if this becomes a common occurrence, a review of the habitat amount would be required.	If development occurs within Goat UWR, an RPBio report and MOE response (or lack thereof) would be on file that describes actions/timing.
TSK-KA-17	Strategy	This exemption provision ensures that the management of Goat UWR is occurring "without unduly reducing the supply of timber from British Columbia's forests".	If no access restriction in place within one year, a rationale should be on file with the MoF.
TSK-KA-17	Result	Activities are in agreement with the Draft General Wildlife Measures for Goat UWR, and in general agreement with the Kalum LRMP	Access restriction in place within one year, or a rationale is on file with the MoF.
TSK-KA-20	Result	Provides for retention of trees in a RMZ, which contributes to the habitat attributes for Coastal Tailed Frog.	See below
TSK-KA-23	Strategy	Allows the identification of specific stands to meet Old Growth Order, which contributes to the habitat attributes for marbled murrelet and grizzly bear.	See below
Objective(s):	FPPR s. 8: "The objective set by government for water, fish, wildlife and biodiversity within riparian areas is, without unduly reducing the supply of timber from British Columbia's forests, to conserve, at the landscape level, the water quality, fish habitat, wildlife habitat and biodiversity associated with those riparian areas."		
TSK-KA-18	Strategy	Allows for the maintenance of water quality and limits the potential for sedimentation or disturbance to riparian areas.	Records kept on file that show the timing of work around fish streams. Documentation kept on file for any activities that occur outside of the timing windows.
TSK-KA-18	Result	Allows for the maintenance of water quality and limits the potential for sedimentation or disturbance to riparian areas.	Records kept on file that show the timing of work around fish streams. Activities are occurring within the timing windows, or if not, there is documentation in either the Site Plan or Road file that identifies that works can occur outside of the window and that they did in accordance with the prescribed actions.

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
TSK-KA-19	Result	This strategy and result has been paraphrased from the Kalum LRMP, and limits the potential for impacts to riparian areas from human activities.	• Other than at required bridge crossings, no direct road links to the banks of the Zymoetz (Copper) River from roads built after 2005. • No more than one active bridge crossing of the Class I portion of the Zymoetz (Copper) River* at any given time.
TSK-KA-20	Result	Provides for retention of trees in a RMZ. This also contributes to the habitat attributes for Coastal Tailed Frog.	As per result – Basal Area retention can be represented by area, and can be in clumps versus distributed along the entire stream. A list of blocks started before FSP approval or April 1/ 06 will have to be provided by BCTS to C&E.
TSK-KA-01	Result	Addresses an area of known soil sensitivity, thereby limiting potential impact on riparian areas in an area that has been singled out in various public planning processes. (i.e. Kalum LRMP)	See above
TSK-KA-22	Result	Limits activities within an area adjacent to the Lakelse River, therefore providing protection to the riparian management area around that river	See below
FPPR s. 47-51, 52(2), 53	n/a	FPPR practice requirements elected	n/a
Objective(s):	FPPR s. 8.1: "(2) Until December 31, 2005 the objective set by government for fish habitat in fisheries sensitive watersheds is to prevent to the extent described in subsection (3) the cumulative hydrological effects of primary forest activities in the fisheries sensitive watershed from resulting in a material adverse impact on the habitat of the fish species for which the fisheries sensitive watershed was established. (3) The objective set by government under subsection (2) applies only to the extent that it does not unduly reduce the supply of timber from British Columbia's forests."		
FPPR s. 55-57	n/a	*No Fisheries Sensitive Watersheds within FSP area*	n/a
Objective(s):	FPPR s. 8.2: "(2) The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to prevent to the extent described in subsection (3) the cumulative hydrological effects of primary forest activities within the community watershed from resulting in (a) a material adverse impact on the quantity of water or the timing of the flow of the water from the waterworks, or (b) the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under (i) an enactment, or (ii) the licence pertaining to the waterworks."		
TSK-KA-21	Result	Ensures that any harvesting in these Community Watersheds results in no hydrological impact, but allows activities to occur, thereby limiting timber supply impact.	No harvesting begins without clear-cut equivalency calculated, or an assessment in place, and a confirmation that the allowable thresholds have been met
TSK-KA-18	Strategy	Allows for the maintenance of water quality and limits the potential for sedimentation or disturbance to riparian areas.	See above
TSK-KA-18	Result	Allows for the maintenance of water quality and limits the potential for sedimentation or disturbance to riparian areas.	See above
TSK-KA-20	Result	Providing for the retention of trees within riparian management zones achieves consistency with the objective for riparian areas	See above
FPPR s. 59-61	n/a	FPPR practice requirements elected	n/a
Objective(s):	FPPR 12(3): Despite section 12.1 (2), a person who prepares a forest stewardship plan must specify in it, for the objective set out in section 8, a result or strategy that addresses retention of trees in a riparian management zone.		
TSK-KA-20	Result	Sets retention requirements in RMZs	See above

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
Objective(s):	FPPR s. 9: "The objective set by government for wildlife and biodiversity at the landscape level is, without unduly reducing the supply of timber from British Columbia's forests and to the extent practicable, to design areas on which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape."		
TSK-KA-22	Result	The early seral stage requirement allows for a balancing of seral stages over time, and the limitation of less than 50% clear-cut harvest systems will also buffer the potential for an over-supply of early seral.	Early Seral stage at less than 27%. Cut blocks less than 15 ha clear-cut (net) At least 15% retention in clear-cut blocks If any cutting, at least 50% partial cut systems at the end of the FSP term.
TSK-KA-23	Strategy	While meeting the requirements of the Old Growth Order, ensures that old growth will be retained over the landscape	Analysis can be reviewed or reproduced to ensure that limits are being met.
TSK-KA-03	Result	Stocking standards as identified are biologically based and will ensure that appropriate forest species choices are made.	See above
TSK-KA-05	Result	Provides for a plan at a landscape level that will give detailed consideration to landscape and stand level biodiversity	See above
TSK-KA-09	Result	Allows for conservation of movement habitat in a low-level pass, which will contribute to biodiversity.	See above
TSK-KA-10	Result	Allows for conservation of movement habitat in a low-level pass, which will contribute to biodiversity.	See above
TSK-KA-11	Result	Allows for conservation of movement habitat in a low-level pass, which will contribute to biodiversity.	See above
TSK-KA-15	Strategy	Provides for a distribution of seral stages and patch sizes across larger areas, providing for diversity at the landscape level	See above
TSK-KA-15	Result	Provides for a distribution of seral stages and patch sizes across larger areas, providing for diversity at the landscape level	See above
FPPR s. 64, 65	n/a	FPPR practice requirements elected	n/a
Objective(s):	FPPR s. 9.1: "The objective set by government for wildlife and biodiversity at the stand level is, without unduly reducing the supply of timber from British Columbia's forests, to retain wildlife trees."		
TSK-KA-24	Result	Provides for wildlife tree retention in accordance with the guidance from a public planning process	Area of wildlife tree retention is within defined limits
TSK-KA-20	Result	Provides for retention of trees in a RMZ.	See above
TSK-KA-22	Result	A requirement for WTP retention is identified.	See above
TSK-KA-23	Strategy	Allows the identification of specific stands to meet Old Growth Order, thereby ensuring wildlife trees will be retained	See above
TSK-KA-31	Result	This result provides for removal of limited amounts of trees from WTPs for an identified traditional use of Cedar or Cypress.	See below
FPPR s. 66, 67	n/a	FPPR practice requirements elected in the Kowesas or Nass FDUs, result **TSK-KA-25** applies in the Terrace, Kitimat Valley, and Douglas-Gardner FDUs	n/a
Objective(s):	The Minister of Sustainable Resource Management made an *Order Establishing Provincial Non-spatial Old Growth Objectives*, effective June 30, 2004. This Order establishes landscape units (LU) and biodiversity emphasis for each LU, and retention levels for old growth by natural disturbance type. This "Old Growth Order" requires an analysis of each LU with respect to the amount of old-growth remaining by biogeoclimatic ecological classification.		
TSK-KA-23	Strategy	Meets the requirements of the Old Growth Order	See above

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
Objective(s):	FPPR s. 9.2(2): "The objective set by government in relation to visual quality for a scenic area, that (a) was established on or before October 24, 2002, and (b) for which there is no visual quality objective is: to ensure that the altered forest landscape for the scenic area (c) in visual sensitivity class 1 is in either the preservation or retention category, (d) in visual sensitivity class 2 is in either the retention or partial retention category, (e) in visual sensitivity class 3 is in either the partial retention or modification category, (f) in visual sensitivity class 4 is in either the partial retention or modification category, and in visual sensitivity class 5 is in either the modification or maximum modification category."		
TSK-KA-25	Result	Limits the potential for visual impact from human activities in the direct vicinity of these high-value rivers. Wording is also consistent with Kalum LRMP.	Either a 100 m reserve strip along the river, or a Site Plan describes how the Preservation VQO is achieved.
TSK-KA-26	Strategy	Consistency is achieved in that the process defines how VSCs will be handled and evaluated as VQOs, and then indicates how management around the VQOs will occur.	VSCs are on FSP map, and VIAs will be done – if concern that VIA not done or VQO not met, C&E can request the VIA.
TSK-KA-26	Result	Addresses VSCs as well as VQOs	VSCs are on FSP map, and VIAs will be done – if concern that VIA not done or VQO not met, C&E can request the VIA.
TSK-KA-27	Result	Limits the potential for visual impact from human activities in the direct vicinity of this high-value area. Wording is also consistent with Kalum LRMP.	Harvesting openings within the area identified on the FSP map is no more than 2 tree lengths wide.
Objective(s):	FPPR s. 10: "The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are (a) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and (b) not regulated under the Heritage Conservation Act."		
TSK-KA-28	Strategy	This strategy allows the identification, review, and update of traditional use and cultural heritage information that is used in the development (and if necessary, amendment) of this FSP. Consistency with the cultural heritage resources objective is achieved by providing a method for conservation and protection of known cultural heritage resource information, and for continual updates to cultural heritage resource information.	Summaries of the process are provided to the District Manager, and copied to the First Nation representative.
TSK-KA-28	Result	The result is specific to an area where a joint planning process is being conducted, and more information may be forthcoming on cultural heritage resources. The time limitation on the result ensures that there will be no timber supply impact in the unlikely event of a "stalled" process.	No logging of TSLs issued by BCTS under this FSP within Gitanyow territory until the process completes or March 31, 2006, whichever comes first.
TSK-KA-29	Strategy	This strategy allows the identification and review of traditional use and cultural heritage information that has not been captured in the development of this FSP. Consistency with the cultural heritage resources objective is achieved by providing for stand-level mitigation of identified cultural heritage resources when necessary.	Information on previously unidentified cultural heritage resource features and a description of any mitigative measures will be provided to the Ministry of Forests' District Manager at or before cutting permit submission.
TSK-KA-30	Result	This result allows the identification and review of traditional use and cultural heritage information that has not been captured in the development of this FSP. Consistency with the cultural heritage resources objective is achieved by providing for stand-level mitigation of identified cultural heritage resources when necessary.	Site plans indicate whether any new cultural heritage information was found, and how any potential impact was mitigated. (For the purposes of confidentiality and protection of cultural heritage features, site plan descriptions may be purposefully vague)

FSP ref. # or FPPR section.	Result or Strategy?	Description of how it is consistent with the Objective	Summary of how the Strategy PROCESS or Result OUTCOME can be measured/ verified
TSK-KA-31	Result	This result provides for the maintenance of a resource for an identified traditional use of Cedar or Cypress. Consistency with the cultural heritage resources objective is achieved by providing for stand-level retention of trees so an identified cultural heritage resource can be maintained.	Review of site plan to see how Cedar and Cypress was maintained. No more removal than allowed from retention areas. Measurement method is described.
Objective(s):	**RECREATION TRAILS & SITES (Higher Level Plan Objectives):** ***Recreation Experience Objective:*** Appropriate semi-primitive motorized winter recreational activities; Semi-primitive non-motorized; Roaded ***Trail Management Objective:*** Active trail and natural vegetation will be retained within 10 metres on either side of the trail centerline. ***Site Management Objective:*** Shoreline, and natural vegetation will be retained within site boundaries ***Access objective:*** Winter motorized access from November 1 to June 30; all motorized activities restricted from July 1 to October 31		
TSK-KA-32	Result	Retention wording is directly from the objectives; Wording regarding the crossing of trails is necessary to ensure no undue impact on timber supply.	No disturbance of trails within 10 m, except as noted.
TSK-KA-33	Result	Retention wording provided to ensure no disturbance of shoreline areas; Wording regarding road access is necessary to ensure no undue impact on timber supply; BA retention confirms that if any activity occurs on the site, vegetation will be conserved.	No disturbance of foreshore within 10 m; Roads only built if rationale provided with TSL/ RP; 40% BA retention or better on any forestry activities.
TSK-KA-34	Strategy	Strategy provides for a method to explain how any activities are consistent with the objective.	Description of consistency with the objective to be supplied with any application.
TSK-KA-35	Result	Wording is as per the objective, except for a clarification that allows access (unlikely) for planning or silviculture activities (this is consistent with the need for a competitive timber industry)	If C&E identifies any motorized activity outside of the window, can investigate and confirm if for a planning/ silviculture activity; Notice provided to the DM.
TSK-KA-36	Result	Ensures access is not cut off, and that there will be road maintenance; result does not preclude the road being at a better than 4WD status.	Roads under Kitselas control are at 4WD or better access
Invasive Plants:	FRPA s 17: For the purpose of section 47 *[invasive plants]* of the Act, a person who prepares a forest stewardship plan must specify measures in the plan to prevent the introduction or spread of species of plants that are invasive plants under the Invasive Plants Regulation, if the introduction or spread is likely to be the result of the person's forest practices.		
Use certified seed only in erosion control and grass-seeding activities		Uncertified seed can contain weed plant seeds. Avoid planting invasive species by using only seed which has been certified as weed-free. Perennial native grasses and legumes should be used for re-vegetation purposes	Seed purchase records.
Wash equipment prior to transporting from one geographic area to another		Prevents transport of invasive plants	Inspection records.

APPENDIX SDB: TIMING WINDOWS

Source: Appendix 1, Table 1 - In-stream Reduced Risk Windows for Provincial Fisheries Zones [Area 5 portion], from *A User's Guide to Working in and Around Water (revised January 2001)*; BC Ministry of Water, Land and Air Protection, Water Management Branch
http://wlapwww.gov.bc.ca/ske/wateract/userguide.pdf

The dates in the table below are periods when in-stream work is least likely to adversely impact fish.

Species	**Area 5**
Chinook Salmon	Jun 15 - Jul 31
Coho Salmon	Jul 1 - Aug 31
Pink Salmon	May 15 - Aug 15
Chum Salmon	May 15 - Aug 31
Sockeye Salmon	Jun 15 - Jul 15
Kokanee	Jun 15 - Jul 15
Steelhead	Aug 15 - Dec 31
Rainbow Trout	Aug 15 - Jan 31
Cutthroat Trout	Aug 15 - Dec 31
Dolly Varden	Jul 15 - Aug 31
Whitefish	Jun 1 - Sep 15
Arctic greyling	N/A
Walleye	N/A
Pike	N/A
Bull trout	Jun 15 - Aug 15

APPENDIX SDC: CLASS I AND II WATERS

Source: *Freshwater Fishing Regulations Synopsis 2004*-2005 [Region 6 portion]; BC Ministry of Water, Land and Air Protection, Fish and Wildlife Branch.

http://wlapwww.gov.bc.ca/fw/fish/pdf/region_6.pdf

Stream/ River system	**Class**	**Time frame**
Gitnadoix River (including tributaries)	Class I	All year
Kitsumkalum (Kalum) River (including tributaries)	Class II	All year
Lakelse River (including tributaries)	Class II	All year
Skeena River (main stem only)		
(a) from 1.5 km above Kitsumkalum River to Exchamsiks	Class II	July 1-Sept 30
(b) upstream of 1.5 km above Zymoetz River	Class II	July 1-Oct 31
Zymoetz (Copper) River (including tributaries)		
(a) Above Limonite Creek	Class I	Sept 1-Oct 31
(b) Below Limonite Creek	Class II	Sept 1-Oct 31

APPENDIX SDD: INVASIVE PLANTS REPORT

APPENDIX SDE: TABLE 6, DRAFT KALUM SRMP (SEPT 2005)

Table 6. Wildlife tree patch retention targets

Landscape Unit	BEC Subzone	Amount of wildlife tree retention required (as a % of cutblock size)[6]		
		TFL 41[7]	TFL1[8]	TSA
Nass River (K'alii Aksim Lisims) Kalum	ICHmc	0	7	0
Skeena River Kalum	CWHvm	0	0	5
	CWHws	0	6	5
	ICHmc	0	0	4
	MHmm	0	0	0
Beaver	CWHws	0	7	6
	MHmm	0	0	0.5
Clore	CWHws	0	6	0
	ESSFmk	0	3	0
	ESSFwv	0	1	0
	MHmm	0	3	0
Exstew	CWHws	0	6	6
	MHmm	0	0	3
Hawkesbury Island West	CWHvh	0	0	0
	MHwh	0	0	0
Hirsh	CWHvm	4	0	3
	CWHws	11	0	12
	MHmm	0	0	0
Ishkheenickh (Ksi Hlginx)	CWHvm	0	2	0
	CWHws	0	2	0
	MHmm	0	0	0
Kalum	CWHws	0	10	9
	MHmm	0	0	4
Kasiks	CWHvm	0	0	0
	MHmm	0	0	0
Kemano	CWHvm	0	0	0
	CWHws	1	0	0
	ESSFmk	0	0	0
	MHmm	0	0	0
Lakelse	CWHws	5	1	7
	MHmm	6	1	0

[6] Many null values are ether the result of absence of a particular BEC subzone from the TFL or TSA, or very little harvesting has happened in the past and as a result no retention is required presently (such as MHmm). The plan may be re-visited in the future to assess the need for retention targets in areas where they have not been established at this time.
[7] TFL area prior to timber re-allocation.
[8] TFL area prior to timber re-allocation.

Landscape Unit	BEC Subzone	Amount of wildlife tree retention required (as a % of cutblock size)[6]		
		TFL 41[7]	TFL1[8]	TSA
Tseax (Ksi Sii Aks)	CWHws	0	4	0
	ICHmc	0	8	0
	MHmm	0	0	0
Wedeene	CWHvm	2	0	4
	CWHvh	2	0	0
	CWHws	9	0	12
	MHmm	3	0	0
Dala	CWHvm	3	0	0
	CWHws	0.5	0	0
	MHmm	0	0	0
Dasque	CWHws	0	7	0
	MHmm	0	0	0
Exchamsiks	CWHvm	0	0	0
	MHmm	0	0	0
Falls	CWHvm	1	0	0
	MHmm	0	0	0
Hawkesbury Island East	CWHvh	1	0	0
	MHwh	0	0	0
Horetzky	CWHws	0	2	0
	MHmm	0	0	0
Hot Springs	CWHws	5	0	6
	MHmm	0	0	0.5
Jesse Bish	CWHvm	0.5	0	2
	MHmm	0	0	0
Keetin	CWHws	0	3	0
	ESSFwv	0	1	0
	ICHmc	0	7	0
	MHmm	0	2	3
Kitimat	CWHvm	8	0	4
	CWHws	3	0	13
	MHmm	0	0	0
Kleanza Treasure	CWHws	0	5	8
	ICHmc	0	0	6
	MHmm	0	1	3
Ksedin (Ksi Mat'in)	CWHws	0	6	0
	MHmm	0	0	0
Nelson-Fiddler	CWHws	0	9	6
	ICHmc	0	0	5
	MHmm	0	2	0

TAB 1 ADVERTISEMENTS

Organised in chronological order, with the most recent information at the back of this section

This information is only provided to the BC Ministry of Forests

TAB 2 PUBLIC REVIEW CORRESPONDENCE AND NOTES

Organised in chronological order, with the most recent information at the back of this section

This information is only provided to the BC Ministry of Forests

TAB 3 FIRST NATIONS' CORRESPONDENCE AND NOTES

Organised in chronological order, with the most recent information at the back of this section

This information is only provided to the BC Ministry of Forests

TAB 4 AGENCY CORRESPONDENCE AND NOTES

Organised in chronological order, with the most recent information at the back of this section

This information is only provided to the BC Ministry of Forests

TAB 5 SUMMARY OF REVISIONS TO THE FSP

Changes from the Public Review version of the 2005 Forest Stewardship Plan for BCTS activities in the Kalum Forest District (March 24, 2005):

FSP Section	Summary of Change	Reason for Change
Throughout	Minor grammatical and typographic updates, as well as minor wording changes to improve document flow – no change to the substance or intent of the document.	Improve document flow.
Throughout	Wording changes to reflect change of Ministry names	Clarification
Certification page	Deleted	Certification not elected
1.7	Added Acronyms section	Feedback from Kitselas First Nation – allows easier review of document
2	Complete revision of presentation style of results and strategies. Information is no longer provided based on Forest Value: Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, and 2.11 have been replaced with a single table in a format that directly references the specific Objective Set By Government.	Format change in response to feedback from the Delegated Decision Maker.
2005-01	Strategy deleted. Result renumbered as TSK-KA-01	Strategy is redundant and captured through the outcome of the result.
2005-02	Strategy and Result renumbered as TSK-KA-02	Clarification
2005-03	Strategy deleted. Result renumbered as TSK-KA-03	Strategy is redundant and captured through the outcome of the result.
2005-04	Deleted	The requirement to address Forest Health has been removed from FRPA
2005-05	Result renumbered as TSK-KA-05	Clarification
2005-06	Result renumbered as TSK-KA-06	Clarification
2005-07	Strategy deleted. Result renumbered as TSK-KA-07	Strategy is redundant and captured through the outcome of the result.
2005-08	Strategy deleted. Result renumbered as TSK-KA-08	Strategy is redundant and captured through the outcome of the result.
2005-09	Strategy deleted. Result renumbered as TSK-KA-09	Strategy is redundant and captured through the outcome of the result.
2005-10	Strategy deleted. Result renumbered as TSK-KA-10	Strategy is redundant and captured through the outcome of the result.
2005-11	Strategy deleted. Result renumbered as TSK-KA-11	Strategy is redundant and captured through the outcome of the result.
2005-12	Strategy and Result renumbered as TSK-KA-12	Clarification
2005-13	Strategy deleted. Result renumbered as TSK-KA-13	Strategy is redundant and captured through the outcome of the result.
2005-14	Strategy and Result renumbered as TSK-KA-14	Clarification
2005-15	Deleted	Moose is not an identified species for the Nass, and therefore cannot be included in the FSP.
2005-16	Strategy and Result renumbered as TSK-KA-18	Clarification
2005-17	Deleted	Revised wording of TSK-KA-21 (old 2005-18) makes this strategy and result redundant

FSP Section	Summary of Change	Reason for Change
2005-18	Result renumbered as TSK-KA-21, and wording updated to reflect inclusion of wildlife retention numbers from Draft Kalum SRMP.	Reflects inclusion of wildlife retention numbers from Draft Kalum SRMP.
2005-19	Deleted	Cannot commit to something before the approval of an FSP as part of the approval of the FSP
2005-20	Strategy deleted. Result renumbered as TSK-KA-20	Strategy is redundant and captured through the outcome of the result.
2005-21	Strategy and Result renumbered as TSK-KA-15	Clarification
2005-22	Strategy deleted. Result renumbered as TSK-KA-22	Strategy is redundant and captured through the outcome of the result.
2005-23	Result deleted. Strategy renumbered as TSK-KA-04	No outcome, just process.
2005-24	Strategy renumbered as TSK-KA-28. Result deleted and replaced by Result TSK-KA-28.	Original result was redundant New result reflects the situation with the Gitanyow
2005-25	Strategy renumbered as TSK-KA-29 Result renumbered as TSK-KA-30	Clarification in response to BCTS internal input.
2005-26	Strategy and Result deleted.	Strategy and result are redundant as they are captured under strategies TSK-KA-28 and TSK-KA-29. This change is based on BCTS internal input.
2005-27	Strategy deleted. Result renumbered as TSK-KA-32	Strategy is redundant and captured through the outcome of the result.
2005-28	Strategy deleted. Result renumbered as TSK-KA-33	Strategy is redundant and captured through the outcome of the result.
2005-29	Strategy renumbered as TSK-KA-34	Clarification
2005-30	Strategy deleted. Result renumbered as TSK-KA-35	Strategy is redundant and captured through the outcome of the result.
2005-31	Deleted.	No legal objective to tie this strategy and result to. Will likely be captured through BCTS due diligence process.
2005-32	Strategy deleted. Result renumbered as TSK-KA-25	Strategy is redundant and captured through the outcome of the result.
2005-33	Strategy deleted. Result renumbered as TSK-KA-36, changed to only address Recreation Trails or Sites with legal objectives, and to reflect that the Deception Lake Recreation Site is decommissioned.	Strategy is redundant and captured through the outcome of the result.
2005-34	Strategy deleted. Result renumbered as TSK-KA-19	Strategy is redundant and captured through the outcome of the result.
2005-35	Strategy and Result renumbered as TSK-KA-26	Clarification
2005-36	Strategy deleted. Result renumbered as TSK-KA-27	Strategy is redundant and captured through the outcome of the result.
2005-37	Deleted	Redundant – captured through *Wildfire Act*
TSK-KA-16	Strategy added to address Goat UWR	Addresses new information provided by MOE.
TSK-KA-17	Strategy and result added to address Goat UWR	Addresses new information provided by MOE.
TSK-KA-23	Strategy added to address Old Growth Order	Content requirement

FSP Section	Summary of Change	Reason for Change
TSK-KA-24	Strategy added to address Wildlife Tree retention requirements (rather than following defaults)	Kalum SRMP is nearing completion, allowing this strategy to be added.
TSK-KA-31	Result added to address cultural use of Cedar or Cypress by First Nations.	In response to input from Haisla, Metlakatla, Lax Kw'alaams, and Gitanyow.
3.1	Wording updated to reflect current status of approved Cutting and Road Permits	Reflects situation as of September 2005.
3.1.5	Wording updated to reflect current status of approved and pending FSPs	Reflects situation as of November 2005.
3.2	Wording updated to show how stocking standards tables in Appendix A are organized. Add reference to FPPR s. 44(4)	Improved wording, and clarification to apply multi-layer stocking to commercial thinning and intermediate cuts.
3.2.1	Wording deleted and replaced by wording to reflect application of stocking standards. Similar to section 3.2.2 of the public review version.	Improves document flow. No change to substance.
3.2.2	Wording deleted and replaced by minimum inter-tree distance wording. Similar to section 3.2.4 of the public review version.	Improves document flow. No change to substance.
3.2.3	Wording deleted and replaced by information regarding height of crop trees above competing brush. Similar to section 3.2.5 of the public review version.	Improves document flow. No change to substance.
3.2.4	Wording deleted and replaced by wording to reflect how to deal with complexes. This information was originally provided with table A1 in Appendix A in the public review version.	Brings the information from the Table in Appendix A.
3.2.5	Wording deleted and replaced by wording to reflect more up to date information on hardwoods.	The wording changes provide clarity as to how hardwoods in the stocking standards will be used, and is based on input and discussions with MoF. Reflects comments from MoF staff on similarly structured FSPs in the Kalum Forest District.
3.2.6	Wording deleted and replaced by wording to reflect more up to date information on stocking standards amendments.	BCTS does not have enough data at this time to satisfy the information needs of the Delegated Decision Maker with respect to defining a "non-significant" departure.
3.2.7	Deleted.	Wording is reflected in the updated section 3.2.5.
3.2.8	Deleted.	This information is already provided as part of Appendix A.
3.2.9	Deleted.	BCTS does not have enough data at this time to satisfy the information needs of the Delegated Decision Maker with respect to defining a "non-significant" departure.
3.3	Remove unnecessary wording regarding measures for control of invasive plant species.	The explanation of why the measures described are necessary has been moved to the supporting document.
3.5	Wording updated to reflect current status of approved FSPs.	Reflects situation as of October 2005.

Supporting Document Section	Summary of Change	Reason for Change
Throughout	Minor grammatical and typographic updates, as well as minor wording changes to improve document flow – no change to the substance or intent of the document.	Improve document flow.
Throughout	Wording changes to reflect change of Ministry names	Clarification
Throughout	Updates throughout to reflect current situation with respect to legislation – no further mention will be made unless it affects the substance of the document.	Clarification
SD1.1.2	Clarified how FRPA Objectives and the FSP address Zones 1, 2, and 3 in the Fiddler TRP.	Clarification
SD1.2	Interpretation section added.	Improves clarity around application of the FSP.
SD1.3	Acronyms section added	Feedback from Kitselas First Nation – allows easier review of document
SD2 (throughout)	Strategy and Reference numbers are updated as per the FSP (see previous table). Throughout the subsections of Section SD2 (i.e. SD2.1, SD2.2, SD2.3, SD2.4, SD2.5, SD2.6, SD2.7, SD2.8, and SD2.10): • a discussion of how consistency with legal objectives is achieved is added to the discussion of "Information specific to the strategies and results"; • a cross-reference is added to other strategies or results that may contribute to management of the forest value described in each subsection.	Assists DDM in the determination of whether strategies and results are consistent with legal objectives.
SD2.3.1	Addition of discussion of Conservation Data Center Red- and Blue-listed species and ecosystems	Provided to discuss how these species are dealt with (most are in the non-legal realm, and are therefore not included within the FSP).
SD2.3.2.1	Wording added to note that Strategy **TSK-KA-20** will help to address habitat attributes, amount, and distribution for Coastal Tailed Frog.	Clarification
SD2.3.5	Wording is updated to reflect the current status of Wildlife Habitat Area designations.	Update from public review version to reflect current situation.
SD2.3.8	Wording added to discuss new strategies and results **TSK-KA-12, TSK-KA-15, TSK-KA-16, TSK-KA-17, TSK-KA-23, TSK-KA-20, TSK-KA-24**	Provides support to the inclusion of additional wildlife strategies and results.
SD2.4.4	Mention made of Carlotta (Clear) Creek, and what will happen if it is designated as a Community Watershed.	Clarification.
SD2.4.6	Reference to Appendix SDB added so that timing windows can be referred to directly through this document.	Provides timing windows information.
SD2.7.1, SD2.7.2	Discussion of results **TSK-KA-23** and **TSK-KA-24** added.	Reflects input from several First Nations groups.
SD2.8.2	Deception Lake, Weewanie Hotsprings, and West Lake Recreation Sites added to list. These sites were included in the table listing the recreation objectives	Minor correction.
SD2.8.3	Wording updated to reflect improved strategy and result wording.	Clarification
SD2.10.1	Wording updated to reflect FRPA definition of Visual Quality Objectives	Clarification

Supporting *Document* Section	**Summary of Change**	**Reason for Change**
SD2.10.2	Wording updated to reflect improved strategy **TSK-KA-26** wording.	Clarification
SD2.11.1	Wording updated to reflect that definition of forage is with respect to Range activities.	Clarification
SD2.12	Table updated.	Assists DDM in the determination of whether strategies and results are consistent with legal objectives.
SD2.13	Section added to allow DDM to cross-reference strategies and results with legal objectives.	Assists DDM in the determination of whether strategies and results are consistent with legal objectives.
SD3.1.3	Reference to Appendix SDD added.	Allows DDM to evaluate invasive plants measures.
SD3.1.4	Wording updated to reflect that definition of natural range barriers is with respect to Range activities.	Clarification
SD3.1.5	Wording updated to reflect current status of approved FSPs.	Reflects situation as of November 2005.
SD4	Source of Information Table updated	Reflects most current information sources and additional communications with experts and agency staff
SD5	Review and Referral information provided	Section reflects review and referral process
Appendices SDA, SDB, SDC, SDD, SDE	New additions.	Appendices added to provide additional information in response to agency input